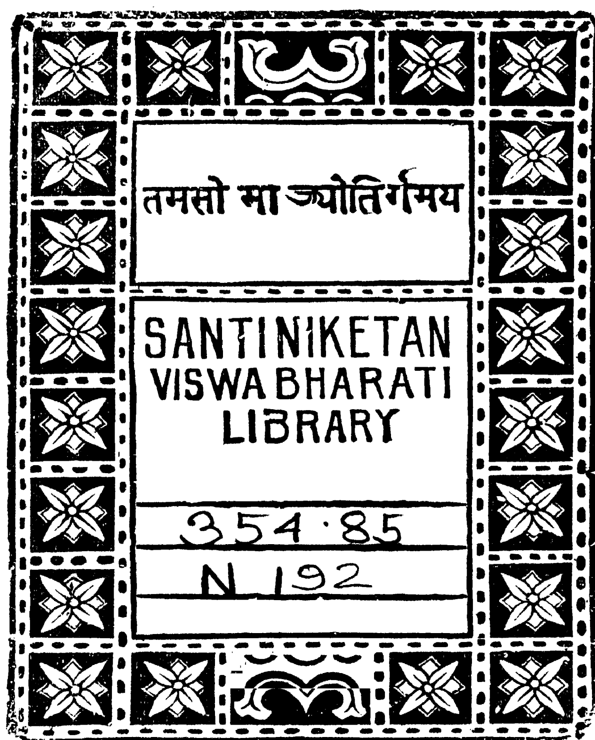

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STATE MANAGEMENT AND CONTROL OF RAILWAYS IN INDIA

STATE MANAGEMENT & CONTROL OF RAILWAYS IN INDIA

A STUDY OF RAILWAY FINANCE
RATES AND POLICY DURING 1920-37

by

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TO

THE MEMORY

OF

MY FATHER

FOREWORD

THE Indian Railways were pioneers in the field of Railway Statistics, and it is in every way appropriate that this book on Indian Railways by an Indian Professor should deal in detail with the statistical position of the Railways, and that it should found its arguments so largely on the annual reports of the Indian Railway Board. For nearly fifty years the Indian Government has given us at regular intervals these invaluable records which are tabulated in the volumes of their yearly reports. Indeed, if one may hint a criticism, it is the voluminous character of these statistics which is perhaps their most serious weakness : they are apt to daunt all but the most intrepid prospectors. Nor is all the ore of equal value. The prospector needs judgment as well as courage if he is to succeed in his task. Fortunately Professor Natesan has both these qualities in full measure.

There are difficult problems in front of the Indian Railways, and of the Indian Government in their dealing with the transport question as a whole. Nothing, one would say, could be more timely than an objective review such as Professor Natesan offers to the reader in this work, followed by his cautious survey of the problems which will call for solution. He has traced with great patience the fortunes of the Indian Railways since they emerged from the crisis of the first world war and as they are manifested in the annual reports of the Government of India over that period; and he has done this not merely for the Railways as a whole, but in very full degree for each of the Railways individually.

It is a remarkable record : it may be doubted if any other system of railways could present a more complete picture of the changes and developments which have taken place in railway operations. Certainly the Indian Government cannot be said to be secretive or to shun the light of day in the province of railway management, and those, like Professor Natesan,

who take an interest in the economics of transport may well feel grateful to it for this policy of publicity.

During the inter-war period the Indian Railways have seen two booms and two depressions. Whatever may have been the alternations of hope and discouragement affecting general railway policy, the operating of the railways shows steady improvement. Yet expenses have increased heavily, and as the years advanced road competition began to make increasingly serious inroads on gross revenues. The general position of the Indian Railways presents similarities with the position of the Railway Industry in other countries: yet one may fairly say that they have met their troubles more successfully, and can reasonably congratulate themselves on better prospects. But the prospects are sober: cautious opinion will hardly look beyond a continued ability to pay the interest on the capital which has been invested, or may in future be invested, in the business.

Apart from finance, the future holds problems of the deepest interest for the Indian Railways. Of all these problems, that of ownership and management is the most urgent. India has so far handled this question along lines peculiar to herself, notably through the development of the government-owned but privately-managed systems. That compromise has rendered good service in the past, but its day is clearly drawing to a close. It is equally clear that, for good or ill, the future lies with state-management. But state-management may take many shapes; and for those concerned in Indian Railways, the task of the immediate future is to develop that form of state management which, in the special conditions of India, will give the most satisfactory results.

The Government of India Act 1935 provides for the constitution of a Federal Railway Authority, perhaps the boldest venture yet proposed in the new realm of large-scale business management in the public interest. All will wish it success, but it is clear that no mere formula will solve the problem. There are many blank spaces in the picture which need to be filled in. What about public control of facilities and charges?

Is an Advisory Committee adequate? What about the relations between the Federal Railway Authority and the Provincial Governments? There will be widely divergent interests to conciliate. Above all, what about other forms of transport —notably road- and air-transport? In these days of rapid development, can any scheme of management which takes account of one only of these competing agencies, hope to provide an adequate solution? These and similar questions are thoughtfully and impartially discussed in Professor Natesan's concluding chapters; and these chapters form perhaps the most valuable portion of the book to those whose special interest lies in giving shape to the future structure of transport organisation in India. The whole problem is indeed one of absorbing interest and peculiarly so in India where the field to be covered is nothing less than a whole sub-continent.

There will be no lack of discussion on the subject. It is fortunate that the Indian public, with whom the practical settlement must rest, have a wealth of statistical material on which to build, and economists capable of handling that material.

RALPH L. WEDGWOOD

PREFACE

TWENTY years ago the policy of state management of railways was adopted and a convention set up separating railway finance from the finances of the Central Government. This step was taken to free railways from the control of the Finance Department and to ensure their administration on commercial principles. The reforms which the Separation Convention enabled railways to initiate have had far-reaching effect on their finance and administration. The financial solvency of railways is of vital concern to the State. For on the ability of railways to meet interest charges on capital and the annual tribute—the contribution—to the State depends the maintenance of the stability of Government's finances. The close interlacing of State and railway finance has had other consequences under the political system of partial executive responsibility to the Central Legislature. Railway finance and administration have aroused considerable interest in the legislature and among the general public. Other questions besides those pertaining to rail transport intrude into the picture. Foreign experience has shown the dangers arising from the close association of the State with the railways, and the consummation of complete state management of railways in India, with other problems, has brought up proposals to overhaul the existing system of control and operation, and the basis of the existing convention. Judgement on the adequacy of these to meet the problems of the present and the future must rest on the conclusions reached on the character of railway working and administration since 1924.

The present study was undertaken to assess broadly the results of state management of Indian railways during 1924-37. The dates present a distinct phase in our railway history : in 1924 railway finance was separated ; and in 1937 occurred the separation of Burma and with it, of the Burma Railways. As the period covers six years of prosperity and seven years of depression,

it affords an opportunity of examining how the system reacted to good and bad years. The temptation to include the period since 1937 was great, but it was resisted for two reasons. During 1937-9, except for a slight improvement in the net receipts and the resort to the moratorium, the situation was essentially the same. Further, the separation of the Burma Railways affected the comparability of the total figures with those of the earlier years. Secondly, the inclusion of the war period since 1939 appeared at the time of writing inadvisable and premature. The reference to the war in all the chapters but the last two is to that of 1914-8 and the terms 'pre-war' and 'post-war' should be understood accordingly.

The work attempts a critical review of the working of the Separation Convention, which essayed the task of reconciling state management with commercial principles of operation. The facts brought out in the course of the study invite attention to defects in the system as it has worked. These have to be removed, if the intentions of the convention are to be fulfilled in fact. The experiment of state management as regulated by the convention is on trial and the fact that dangers commonly associated with direct operation were in the main averted in the past offers no assurance of immunity for the future. The evidence developed in the following pages suggests the need for counteracting certain undesirable features to be discerned in the existing system of state management of railways. The revision of the convention is already under way and schemes of post-war railway rehabilitation and reorganization are under consideration. Decision on these matters cannot be arrived at without a correct appreciation of the problems to be met. The conclusions reached in respect of some of these will, the author ventures to hope, be of value in discussing the merits of the proposals designed to secure the operation of railways under state management with economy and progressive efficiency.

This is probably the first attempt to treat railway finance for the inter-war period in all its aspects. The detailed examination of the individual railways has brought into clearer

focus not only their financial status, but also the comparative performance of the state-managed and the company-managed railways. It has shown the inadequacy of the existing system of financial control by the Railway Board and underlined the need for certain radical changes. The financial reforms carried out during the period raised questions of principle which have been discussed in detail in the light of approved practice in other countries. On these and other topics, some fresh ground, the author hopes, has been broken.

The story of railway operation and performance is essentially one told by statistical analyses. Changes in principle and procedure, quite frequent during the period, vitiate the comparability of figures, but some approach to fair comparison, it is hoped, has been reached in the tables accompanying the text. Every care has been taken to check both the basic data and the analytical tables.

The principal sources of information for this work are the annual reports of the Railway Board. The information contained in Volume II of these reports supplied the basic data for most of the tables. Besides these, there are the proceedings and reports of the standing committees of the Central Legislature and the reports of the expert committees appointed by Government to investigate specific aspects of railway finance and working. To all these acknowledgement is made in the course of the work and in the bibliography.

For the interest manifested in the work, independently undertaken by the author, and sustained encouragement to complete it in its present form, he expresses his gratitude to Dr. J. P. Niyogi.

L. A. NATESAN

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L. A. N.

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Page		Line	
29		30	*for* five *read* 5·5
275		21	*for* Figure V *read* Figure VI
275		40	*for* Figure V *read* Figure VI
276		1	*for* Figure V *read* Figure VI
287	footnote	1	*for* account the *read* account
290		28	*for* Figure VI *read* Figure VII
298		1	*for* 22·3 *read* 22-3
312		6	*for* knowiedge *read* knowledge

CONTENTS

CHAPTER I

CHAPTER II

CHAPTER III

FINANCIAL STATUS OF INDIAN RAILWAYS .. .. PAGE 96

CHAPTER IV

RAILWAY TRAFFIC: PASSENGER TRANSPORTATION .. PAGE 136

CHAPTER V

CHAPTER VI

CHAPTER VII

TABLES AND CHARTS

CHAPTER I

THE INDIAN RAILWAY SITUATION DURING 1920–4

The problem of state versus company management, 1. The comparative route milage of state-managed and company-managed railways, 2. The true status of the guaranteed companies, 4.

Effects of the war on Indian railways, 6. Appointment of the Controller of Traffic and the priority certificate system, 8. Conditions during 1917-20, 10.

Demand for state management, 11. Acworth Railway Committee, 13. Findings on the policy of state-management, 14. Observations on the inadequacy of transport facilities, 16. Effects of the financial policy of Government, 18. The shortcomings of the organization for control, 20. Railways and their customers, 21.

The Railway Finance Committee on the separation of budgets and rehabilitation, 21. The Retrenchment Committee. Criticism of the financial results and of the program revenue expenditure, 24. Administrative reforms, 27.

Separation of railway finance, 28.

THE political and economic developments in India after the Great War marked the beginning of a new era for Indian railways. On the threshold of the twenties great expectations were aroused by the prospect of political reforms bringing with them substantial elements of responsibility to the new Indian legislatures. As the State had a major financial interest in Indian railways, the emergence of executive responsibility to the Central Legislature under the new constitution affected the administration of the Railway as well as the other Departments of the Government of India. Even more far-reaching in its economic effects was the policy adopted in regard to railway operation; the policy of state acquisition and management of the State-owned railways initiated at the instance of the Indian Railway Committee, 1920–1. To understand the subsequent developments in their correct economic and political perspective, it is necessary to keep in mind the railway situation in 1920.

The question that dominated all other issues at the time was that of state versus private operation of railways. It may be observed that the problem was *not* that of state

versus private ownership, as state ownership was already accomplished to the extent of six-sevenths of the total milage. But this state ownership was divorced from state operation in consequence of the policy followed for quite a number of years of leasing the majority of the State-owned railways to be worked by private companies. The ownership of the different lines constituting the Indian railway system and the actual milage operated by different agencies during 1920–1 were distributed as follows :

	Milage owned	Milage worked
Government (including provincial governments and district boards)	26,889	8,929
Indian States	4,394	2,889
Private companies	5,746	25,211
Total ..	37,029	37,029

The systems worked by the Government of India were the North-Western Railway, the Eastern Bengal Railway and the Oudh and Rohilkund Railway.[1] The railways worked by the Indian States formed the smallest group of all and varied from the 1,356 miles of the Jodhpur and the Bikaner Durbars to the 37 miles of the state of Cutch.[2] The largest of the groups was the company-worked milage. The companies in this group worked both the State-owned railways and their own (privately-owned) railways. The magnitude of the privately operated lines may be judged from the following table showing the number of companies, their domicile and the total milage worked :

[1] The milages of these systems were respectively 5,520, 1,738 and 1,609. In this group were also included two tiny railways—the Jorhat (Provincial) Railway (33 miles) and the Aden Railway (29 miles).

[2] There were twelve Indian States which operated railways whose respective milages during 1920-1 were as follows :

	State	Milage worked		State	Milage worked
(1)	Jodhpur	1,356	(7)	Junagad	141
(2)	Bikaner		(8)	Morvi	93
(3)	Mysore	391	(9)	Udaipur	67
(4)	Gwalior	250	(10)	Navanagar	54
(5)	Gondal	231	(11)	Dholpur	52
(6)	Bhavnagar	217	(12)	Cutch	37

Source : *Railways in India Administration Report* 1920-1, Vol. I, p. 7.

TABLE 1. COMPANIES OPERATING RAILWAYS IN 1920-1

	Company	Domiciled in	Milage worked
	State-Owned		
(1)	Assam Bengal Railway	England	1,021
(2)	Bengal and North-Western Railway	,,	2,063
(3)	Bengal Nagpur Railway	,,	2,843
(4)	Bombay Baroda and Central India Railway	,,	3,933
(5)	Burma Railways	,,	1,623
(6)	East Indian Railway	,,	2,770
(7)	Great Indian Peninsula Railway	,,	3,335
(8)	Madras and Southern Mahratta Railway	,,	3,047
(9)	Rohilkund and Kumaon Railway	,,	575
(10)	South Indian Railway	,,	1,852
	Private-Owned		
(11)	H.E.H. The Nizam's Guaranteed State Railways	,,	897
(12)	Messrs. Martin & Co., Ltd.	India	325
(13)	Messrs. McLeod & Co., Ltd.	,,	188
(14)	Bengal Dooars Railway	England	158
(15)	Darjeeling Himalayan Railway	India	146
(16)	Barsi Light Railway	England	118
(17)	Assam Bengal Railways and Trading Company	,,	91
(18)	Guzerat Light Railways	India	89
(19)	Bengal Provincial Railway	,,	42
(20)	East India Distilleries and Sugar Factories, Ltd.	,,	32
(21)	Dehri Rohtas Light Railway	,,	24
(22)	Tezpore-Balipara Light Railway	,,	20
(23)	Madaya Light Railway	,,	16
(24)	Jagadhri Light Railway	,,	3

The details set forth above indicate that the problem of state ownership had long ceased to be a live issue. In 1920, the Government of India, for example, already owned 73 per cent of the total railway milage of the country. If the lines owned by the Indian States are excluded, the private companies accounted for only 15 per cent of the total milage. In spite of this predominant state proprietorship, the Government operated only 21 per cent of the railway systems, whereas

the companies, despite their limited ownership of only 15 per cent of the lines, worked nearly 70 per cent of the total railway milage in India.

THE TRUE STATUS OF GUARANTEED COMPANIES

The companies operating railways in India were not private enterprises in the true sense of the term, and their interest in the undertakings was not comparable to that of ordinary joint-stock enterprises in the country. With a nominal capital outlay and guaranteed interest thereon, they were only managing agencies working under the strict regulations and conditions imposed by the Government of India. It is essential to bear these facts in mind before proceeding to examine the post-war developments. Stated briefly, the companies which contributed one-tenth of the total capital outlay of the railway systems were given control over properties ten times that value and were guaranteed besides a minimum rate of interest on their investment, varying from 2½ to 4 per cent.

That this position was not entirely of the companies' own seeking is clear from the history of Indian railways. On the expiry of the original contracts of the companies, fresh contracts were made constituting new companies and this resulted in altering the relative position of the companies. The old companies had owned the railways they worked ; but the new companies were not owners of the undertakings they managed. Further, in apportioning the capital, the State had been appropriating the goodwill developed in the course of years. Thus :

> 'The Secretary of State's share, on which his proportion of the surplus income is based, does not necessarily represent the actual cash investment. Some part of it is merely a capitalization of the goodwill created under the original contract by the joint efforts of the owning company and the guaranteeing Government. The proposition was worked out in this way : the Government acquired the undertaking of a given company for, say £1,000,000. The undertaking had been earning on the average of the last five years a net revenue of £100,000. In other words, capitalized on a 5 per cent basis the property was worth £2,000,000. When it came to fixing the respective capital of the two parties to the new contract, on the basis of which the surplus profits were to be divided, the Secretary of State's

capital was assumed to be not the £1,000,000 cash which he had paid, but the £2,000,000 which the asset was regarded as worth; while the amount put in by the company was taken to be not more than the cash capital which its shareholders subscribed. In a word, the Secretary of State acquired the property out and out, and the goodwill, realized by the joint efforts of the old company and the owning Government, passed with the physical assets. The new contract was given to a company which, though it had the old capital, the old directors and the old shareholders, was regarded as a new company starting *de novo* with no inheritance of the goodwill partly due to its former efforts.'[3]

The shareholders of the guaranteed railway companies also occupied a position different from that of ordinary shareholders. Their interest in the surplus profits varied from 1/20 in the case of the Great Indian Peninsula Railway to 12/35 in the case of the Burma Railways. Whatever their capital investment or interest in the surplus profits, they had one peculiarity in common, namely, that the shareholders had no share of the assets of the undertaking. This unusual feature in the case of the shareholders of the guaranteed companies also affected the debenture holder.[4]

[3] *Report of the Indian Railway Committee* hereinafter referred to as the Acworth Committee, para 194, pp. 61-2. The point was clearly illustrated by the East Indian Railway, which, the Report stated, 'is not, in the ordinary sense of the word, a railway company at all. Not only does it not own a mile of the railway or a single engine, but it is not joint owner to an infinitesimal extent of the East Indian Railway undertaking. The East Indian Railway belongs, lock, stock and barrel, to the Government of India. If, on the termination of the latest contract in 1924, the Secretary of State declines to renew the contract, the company merely expires. It hardly seems to need to be wound up, for it will possess no assets.' para 196.

[4] The position of the debenture holder was summed up by the Acworth Committee in the following terms: 'His security—the guarantee of the Secretary of State—is doubtless ample; but it is not what it would naturally be supposed to be. Normally a debenture holder has a charge on the undertaking to which he lends money, and can enforce his rights either by the appointment of a receiver or by foreclosure and sale. The debenture holder of an Indian railway has no such charge. The company to which he lends money is not the owner of the undertaking; he has only a personal contract with the owner of the undertaking, the Secretary of State. What happens is this. The prospectuses of all the debenture issues that we have seen state that the money is "required for the general purposes of the company." The subscriptions are actually paid into the Bank of England, by or on behalf of the company, to the credit of the Secretary of State. If the company is in debt to the Secretary of State for advances, these advances are written down in his books by the amount of the new issue, but the actual cash received remains in his possession. A witness described the procedure to us by saying that the Secretary of State acts as, in a sense, banker to the company. Seeing that the Secretary of State holds the money in his own name; that the company have no power to touch it without his consent; that, in fact, he frequently applies it to expenditure on another railway; and that, even on the undertaking of the issuing company, the money can only be spent when and to such an extent as the Secretary of State permits, and on works which he approves, it does not seem to us that the use of the term "banker" is really helpful in understanding the actual facts of the case.' (para 198, pp. 62-3.)

The part which the present guaranteed companies subsequent to the date of their formation have played in financing the railways appears, through no fault of their own, to have been quite unimportant. Both Sir Thomas Robertson in his report of 1903 and the committee presided over by Sir James Mackay (later Lord Inchcape) in 1908 recommended that the companies should be allowed to obtain a large interest in their undertakings. But the Secretary of State steadily refused to accede to the suggestion. The preponderant interest which Government acquired in the railways, as a result of this policy, was a weighty consideration in deciding on state management.

Some of the problems which faced Indian railways in 1920 were the heritage of the war. Before discussing the situation in 1920-1, a brief reference may be made to the effects of the war on the rail transport system.

EFFECTS OF THE WAR ON INDIAN RAILWAYS

The war left on Indian railways the effects of its enormous economic and financial strain. Thanks to the stimulus imparted by the Mackay Committee, Indian railways had, from 1908 onwards, enjoyed a period of expansion. The immediate effect of the outbreak of war was to arrest the process of growth. With the increasing preoccupation of the Government with the war during the succeeding years, the flow of funds towards railway development dried up. Meanwhile the railways were called upon to undertake the transportation of troops, material and supplies at short notice, and, besides, to meet heavy demands for staff and material for railways in East Africa, Mesopotamia and elsewhere. Railway workshops diverted their resources to the production of high explosive shells, hospital trains and other war equipment. That was not all. The expeditionary forces were supplied with railway materials. The metre gauge rolling-stock and permanent way materials supplied up to 31 March 1916, amounted to 50 locomotives, 600 vehicles, 165 miles of rails and fastenings, and half-a-million sleepers. Large quantities of stores and tools and plant of all kinds necessary

for the construction, repair and working of railways were also provided by the broad and metre gauge railways.[5]

As the war progressed these demands and supplies naturally increased. The responsibility for providing staff and materials for the construction and working of military railways in the East fell entirely on the Indian railway system. The strain of the increased traffic became so heavy on some of the larger railways that they were compelled to ask for the return of the men spared for the war. By the end of 1917-8, the metre gauge lines had 'given up so many units of locomotives and goods stock that any further considerable call on them would, it was recognised, in spite of the reduced passenger train services, endanger the interior economy of the country and the efficiency of the Indian railway system as a line of communications for the overseas forces.'[6]

There were other developments. The difficulty of obtaining shipping and the diversion of coal traffic to rail, and the transport of fodder required to meet the fodder famine in Rajputana and the Punjab, made particularly heavy demands on rolling-stock. Though the famine area was mostly served by the metre gauge railways, the congestion reacted on the broad gauge railways as well.[7] As the war progressed the pressure on railways was gradually intensified by the heavier

[5] *Railways in India Administration Report* 1915-6, Vol. I, p. 8.

[6] *Railways in India Administration Report* 1917-8, Vol. I, p. 4. Also Cf., 'The resources of Indian railways have been employed in a multiplicity of ways in meeting overseas demands. Various railway administrations have contributed directly to the several overseas theatres of war, large numbers of metre gauge and 2′ 6″ gauge locomotives and vehicles, and have also set free a large milage of track. A large quantity of rails destined for ordinary maintenance of railways in India from the works of the Tata Iron & Steel Company has also been diverted to overseas military railways. Together with the stock and track referred to above, they provided plant, equipment and ...personnel; and their stores organizations were extensively employed on the purchase of materials for supply to expeditionary forces. Their workshops undertook miscellaneous manufacture such as clothing, tent and picketing gear, hospital furniture, ambulance trains, armoured cars and rail motor ambulance vehicles.' *Railways in India Administration Report* 1916-7, Vol. I, p. 8.

In the following year it was stated : 'Very great assistance has been given by railways not only in constructing hospital trains, ambulance cars and new goods stock for military railways, but also in supplying for military purposes all manner of transport and other accessories such as pontoons, portable huts, transport carts, aeroplane parts, harness and saddlery, camp furniture, etc. It may be mentioned in order to give some idea of the magnitude of these operations that one workshop on the North-Western Railway has supplied numbers of such articles (individually small) to the value of 45 lakhs of rupees.' *Railways in India Administration Report* 1917-8, Vol. I, p. 4.

[7] *Railways in India Administration Report* 1915-6, Vol. I, p. 29.

demands of the Admiralty. Fresh difficulties arose in connexion with supplies from collieries, which fell into arrears in 1916-7 due to sickness among labour. The carrying capacity was sought to be increased by the introduction of a system allowing of the indiscriminate use within the coalfield districts of wagons belonging to any railway, which avoided delays involved in the sorting, allocation and marshalling of rolling-stock according to ownership under the old system. Towards the end of the financial year 1916-7 and for some weeks thereafter 'the difficulties in regard to the movement of traffic were further accentuated by the heavy demands made on behalf of Government for the transport of wheat and other essential food grains for export to the United Kingdom.'[8]

PRIORITY CERTIFICATE SYSTEM

These complications regarding the movement of traffic necessitated the appointment of a Controller of Traffic in June 1917. His duties were :

> 'to advise railways as early as possible of anticipated heavy traffic and to instruct them when any traffic should be restricted or held up to permit of more urgent traffic being carried ; to divert traffic from one or more routes to others in order to quicken transit or remove congestion ; to divert wagons temporarily, if necessary, from one railway to another ; in short to take such steps on behalf of Government as will result in the most economical use of the limited transport available on railways and to control traffic over railways in the best interests of national and general purposes.'[9]

In view of the exigencies of war finance, a drastic reduction of expenditure on works programs became imperative. Not only did this interfere with the completion of new works in progress ; the programs of renewals were also upset. In almost every case renewals of the permanent way were cut

[8] *Railways in India Administration Report* 1916-7, Vol. I, p. 22. Cf. 'The pressure was severe on the metre gauge route to Karachi, which was met by a diversion of the traffic in excess of the capacity of that route to the broad gauge route, and on the Great Indian Peninsula Railway, which was obliged to stop the booking of public traffic for considerable periods in order to carry the urgent military and other essential traffic. This was the position on the Bengal Nagpur Railway too in regard to traffic via certain junctions, and similar heavy restrictions on public traffic had to be imposed on certain sections of the Madras and Southern Mahratta Railway and from time to time temporarily over the Bombay, Baroda and Central India and several other railways.'

[9] Ibid., pp. 22-3.

down while renewals of rolling-stock were even more severely curtailed, owing to the impossibility of obtaining raw material.[10] The deficiency was attempted to be made good by purchases from America, but the adverse exchange and the drain on the financial resources of Government precluded Indian railways from obtaining supplies from that country to any appreciable extent. The railway administrations were therefore unable to obtain the supplies necessary for their adequate maintenance. The Railway Board pointed out :

> 'It was impossible to obtain rolling-stock either for additions or renewals, while boilers long overdue for replacement had perforce to be kept in service at the cost of an increased consumption of materials for repairs. The shortage of shipping had diverted a large volume of traffic from the sea to the rail route. Railways therefore were faced with an abnormal demand for traffic facilities at a time when additional equipment was unobtainable and facilities for repairs were curtailed. These difficult conditions led to the adoption of ingenious devices for the re-utilization of old materials, and to a relaxation in accepted standards of wear.'[11]

This situation led to the restriction of passenger services in order to reduce the demands for materials required for the maintenance of locomotives and rolling-stock and to conserve the available locomotive power for the carriage of military and other essential traffic.[12] The result of this policy is reflected

[10] *Railways in India Administration Report* 1915-6, Vol. I, p. 29. The Report states elsewhere : 'The supply of materials for railways became more and more difficult. To make available for work of greatest immediate importance as much as possible of the essential raw materials and also of the labour usually employed in converting these materials into articles used by railways, it became necessary to restrict supplies to each railway to the minimum necessary for the upkeep and working of its system. The India Office were required by the Ministry of Munitions to certify to the necessity of the supply to Indian railways of any articles which involved any interference, direct or indirect, with the manufacture of munitions of war, frequent telegraphic references to the Government of India resulted and an arrangement was therefore come to that all indents, which railway administrations in India desired to transmit to the United Kingdom should be scrutinized by the Railway Board before they left India. In examining these indents the Railway Board take into consideration the necessity of obtaining the materials as indicated by the stocks held by railways and the rate of consumption ; the possibility of obtaining supplies from stocks in India and the possibility of manufacture in whole, or in part, in India. Similarly, application has to be made to the Railway Board by private firms when they desire assistance in obtaining from the United Kingdom material required to enable them to comply with any railway order.' In conclusion, it was added, 'there is every indication that it will prove satisfactory ; but unfortunately the quantities of material which the Ministry of Munitions can make available for Indian railways are not always equal to the aggregate demands to meet essential requirements. It has, therefore, been necessary to arrange for a distribution of as much material as is available in such a way as will cause the minimum loss of efficiency.' Ibid., p. 41.

[11] *Railways in India Administration Report* 1916-7, Vol. I, p. 27.

[12] A meeting was held early in December 1916 between the Railway Board and the agents and managers of the principal railways, as a result of which 'Certain mail and a large

in the reduced train milage owing to the decrease in train services. The railways operated in 1917-8 only 44,407,000 train miles as against 55,972,000 train miles in 1913-4. To check further demand on the lowered capacity, fares were raised with the object of restricting travel.

Throughout the year 1917-8, Indian railways were affected by the three factors mentioned above, namely, restriction of funds, the difficulty in obtaining materials for the proper maintenance of works and rolling-stock, and the congestion of traffic caused by the diversion of coastal trade to the railways and the perpetual movements of troops, military stores and supplies. The military demands proved so urgent, that the Government, in view of the impossibility of obtaining new permanent way materials for renewals, had to dismantle over 420 miles of open lines in different parts of the country.[13]

The problem of the congestion of traffic took an acute turn. When it was found impossible to move all traffic offering, a list was drawn up of commodities in order of priority to act as a guide to the railway administrations as to the order in which they were to dispatch the different classes of traffic. Increase in local traffic on account of greater demand from the Admiralty and railways, frequency of military movements, and conveyance of supplies and stores, monopolized the railways' transport capacity to such an extent as to leave hardly more than 20 per cent of the rolling-stock for the conveyance of ordinary public traffic. After a comprehensive review of the situation by the Controller of Traffic, during 1917, a Central Priority Committee was constituted with

number of passenger trains were abolished, all possible measures being adopted to minimise the inconvenience caused to the public who are obliged to travel by making up to the maximum permissible the loads of trains left on, and by reducing the upper class accommodation and replacing it by third class.' The reductions of the first four months aggregated 22 per cent of the passenger and the mixed train milage as compared to the corresponding period of the previous year. 'Instructions were also issued to restrict everything in the nature of luxuries, such as restaurant cars and reserved carriages, wherever this could be done without causing disadvantages outweighing the advantages to be gained.' Similar restrictions were also imposed on pilgrim and festival traffic to avoid congestion or delay to goods stock. *Railways in India Administration Report* 1916-7, Vol. I, p. 23.

[13] The whole of the Sutlej Valley Railway and small portions of the North-Western, East Indian, Madras and Southern Mahratta, and Oudh and Rohilkund Railways were dismantled. *Railways in India Administration Report* 1917-8, Vol. I, p. 19.

representatives of different interests such as the military, shipping, munitions, agriculture, commerce and industry, as authority to decide on priority in the movements of traffic. Traffic was divided into 'urgent,' 'preferential' and 'ordinary' and each of these was again subdivided into 'military' and 'civil.' Directors of civil supplies and the priority certificate system helped to reduce the volume of the urgent and preferential traffic to the minimum and thus to increase the margin of transport capacity for ordinary traffic.

These special measures were withdrawn gradually on the termination of the war, and the Controller of Traffic and the central priority certificate system were abolished in 1919-20. Meanwhile the accumulated arrears of repairs and the deficiency of rolling-stock became so serious as to render imperative a supply of 100 locomotives from Great Britain almost as a war measure,[14] and 5,000 wagons were obtained from the United States.

To conclude. The Indian railways emerged from the war period in a battered and dilapidated condition. The physical equipment was in a state of serious disrepair. The railways were short of stock and many locomotives were long past the age of superannuation; workshops deficient in materials and disorganized with war work; yards so overcrowded as to be incapable of handling increased traffic; speeds reduced owing to the worn-out track and ageing girders. The damage was extended even to the personnel, as a large number of officers, subordinates and other employees were released for military employment. It was patent that a complete rehabilitation was imperative if the railways were to undertake their normal functions.

DEMAND FOR STATE MANAGEMENT

The period just reviewed was pregnant with other developments of far-reaching importance. The pronouncement of

[14] The Army Council's sanction was needed to put through the order for the supply in England.

1917 regarding the conferment of responsibility for the administration of India and the subsequent developments culminating in the passage through Parliament of the Government of India Act, 1919, profoundly modified the position of the Indian railways *vis-a-vis* the Government. The constitutional changes increased the powers of the Central Legislature and its control of Government policy with reference to the Railway as to the other Departments. The inauguration of the Montagu-Chelmsford Reforms was looked forward to with expectations of securing better conformity to general public opinion in the administration of railways. Indian opinion on the question of state management of railways was unanimous and the demand for state management was reinforced both on political and economic grounds.[15] In 1910, 1912 and 1913, the question of policy was raised in the Imperial Legislative Council during the budget discussions and through interpellations, and in 1914, 1915, 1917 and 1918, resolutions were moved urging the appointment of a committee to inquire into the desirability of adopting direct state management.[16] In the mean time official opinion had also to some extent definitely identified itself with the move for state management.[17] The expiry of the contract with the East Indian Railway Company in 1919 presented

[15] A typical instance of the attitude on this question may be quoted from Gokhale's speech in the Imperial Legislative Council during the budget discussions for 1910-1: 'I think it would be very desirable if State railways were managed by the State instead of their being managed by companies. I know that this is a question about which there is a difference of opinion, but apart from other things—whether the thing would be immediately more costly or less costly, on that I have heard two opinions—there is one distinct advantage which I claim for this, and that is that in the end state management will be more economical. You compare the ordinary public works list—the personnel of the public works offices with the personnel of railway offices. Throughout you will find a practical exclusion of Indians from the higher ranks of the railway service. Whereas in the Public Works Department, a considerable proportion consists of Indians, in the railway service it is only here and there that you find an Indian; for the most part Indians are carefully shut out. Now, if all these railways were managed by the Government, the Government would, in the first place, be more sympathetic with our aspirations than boards sitting in London, and secondly the Government would be more responsive to any pressure of opinion put upon it. The boards being in London, we may say what we like, they go on doing what they please, and the agents here must obey their directors there. Therefore, as long as the management is in the hands of companies, the exclusion of Indians from the higher ranks of the railway service must continue, whereas if the management were to pass over to the Government, there would be a more steady employment of Indians in the higher ranks of the service, and this in due course is bound to lead to greater economy in the management of railways.' *Speeches of Gopal Krishna Gokhale*, third edition, Natesan, p. 366.

[16] N. Sanyal, *The Development of Indian Railways*, 1930, p. 221.

[17] In reply to a Railway Board's circular, the Governments of Bombay, Madras and Bengal replied in favour of state management. Op. cit., Sanyal, p. 222.

an opportunity for testing the intentions of the Government of India. The opinion of Government appeared to favour the termination of the existing system and a transference of control to an Indian company. Failing this, the State would assume direct management of the East Indian Railway. Towards the close of 1917, the Secretary of State gave notice for the termination of the contract with the East Indian Railway Company.

ACWORTH RAILWAY COMMITTEE

The decision necessarily had a profound effect on the policy with reference to the other companies as well. The importance of deciding the policy once for all was clear, as the contracts with some other companies were due to expire within a few years. The Secretary of State for India therefore appointed the Indian Railway Committee in November 1920, with Sir (then Mr.) William Acworth as chairman, and renewed the contract with the East Indian Railway Company for a period of five years. The committee's terms of reference were :

(1) to consider, as regards railways owned by the State, the relative advantages, financial and administrative, in the special circumstances of India, of the following methods of management :

- (*a*) direct state management ;
- (*b*) management through a company domiciled in England and with a board sitting in London ;
- (*c*) management through a company domiciled in India and with a board sitting in India ; and
- (*d*) management through a combination of (*b*) and (*c*) ;

and advise as to the policy to be adopted as and when the existing contracts with the several railway companies can be determined.

(2) to examine the functions, status and constitution of the Railway Board, and the system of control exercised by the Government of India over the railway administration and recommend such modifications, if any, as are necessary for the adequate disposal of the railway business of Government ;

(3) to consider arrangements for the financing of railways in India, and in particular the feasibility of the greater utilization of private enterprise and capital in the construction of new lines ;

(4) to report whether the present system of control by Government of rates and fares and the machinery for deciding disputes between railways and traders are satisfactory, and if not, to advise what modifications are desirable; and

(5) to make recommendations that may seem germane to the inquiry.

The recommendations made by the Indian Railway Committee were so comprehensive and their effects on subsequent policy so far-reaching that a detailed reference to the report of the committee is necessary to appreciate the character and implications of the developments which followed. The committee was remarkable for the experts it contained.[18] It took evidence both in London and in India, sitting for fifty days and examining 142 witnesses, besides receiving written statements from them. The report was published in September 1921. After a review of the railway situation the committee found that on the question of management, any reversal of the present policy in the direction of the English domiciled companies acquiring greater control and increasing their share capital

'would meet with strong opposition from a large body of the public in India. We cannot, therefore, recommend the adoption of that course. Moreover, an overwhelming majority of the witnesses who appeared before us in India, whether individually they advocated state or company management, urged that the time had come when the control, both financial and administrative, of the Indian railways should be transferred to India.'[19]

Despite all the advantages of the London boards, the committee argued,

'conditions in India have changed so greatly in the last few years, and are changing so rapidly at this moment that whatever may have been

[18] The committee consisted of (1) Sir William M. Acworth, *Chairman*; (2) Sir Henry P. Burt, K.C.I.E., President of the Indian Railway Board (1914-5), Director of the Indian Railway Companies, India Office (1915-9); Chairman of the Bengal and North-Western, and the Rohilkund Kumaon Railway Companies; (3) Sir Rajendranath Mookerjee, K.C.I.E., of Calcutta; (4) Sir Arthur R. Anderson, C.I.E., C.B.E., President of the Indian Railway Board, 1919-20; (5) Sir George C. Godfrey, Agent, Bengal Nagpur Railway Company; (6) The Hon. Mr. V. S. Srinivasa Sastri, Member of the Council of State; (7) Mr. E. H. Hiley, C.B.E., formerly of the Great Northern and North Eastern Railways, and later General Manager of the New Zealand Government Railways; (8) Sir Henry Ledgard of Cawnpore; (9) Mr. Purushottamdas Thakurdas, C.I.E., M.B.E., M.L.C., of Bombay; and (10) Mr. James Tuke, Director of Barclay's Bank and the British Linen Bank.

[19] *Indian Railway Committee Report* hereinafter referred to as the Acworth Committee Report, para 203, pp. 63-4.

the position in the past, we think the advantages of English management are now outweighed by the great disadvantages of absentee control and the difficulty of keeping in close touch with the modern social and trade conditions of India.'[20]

On these grounds, therefore, the committee unanimously recommended that the 'English domiciled guaranteed companies should cease to exist at the termination of their present contracts.'[21] While the committee were unanimous in condemning the existing system, they could not agree as to the proposals for future management. Sir William Acworth, the chairman, and four others,[22] found, in view of the unreality of private enterprise in the true sense of the term in the guaranteed companies, the absence of initiative in the state as well as English domiciled company management, the preponderating influence of the Government directors and the Government's detailed control, that the Government's control was negative and freedom for private enterprise non-existent. Real transference of ownership and operation to Indian companies was impossible and Indian opinion was overwhelmingly in favour of state management. Again, on the test of efficiency, neither form of management was superior in India. The conclusion reached was that 'approaching the question, not as one of national sentiment, but purely from the practical point of view, we find ourselves in agreement with the almost unanimous opinion of Indian witnesses, and recommend that the undertakings of guaranteed companies, as and when the contracts fall in, be entrusted to the direct management of the State.'[23]

The other members[24] of the committee wanted it to be recognised that in view of certain lines, such as the North-Western Railway, having to be operated by the State on strategic grounds, and the contracts of the companies running for a considerable number of years, such as the Bengal Nagpur Railway till 1950, the dual system was inevitable. Pronouncement

[20] *Acworth Committee Report*, para 206, p. 64.
[21] Ibid., para 207, p. 64.
[22] Messrs. V. S. Srinivasa Sastri, E. H. Hiley, Purushottamdas Thakurdas and J. Tuke.
[23] *Acworth Committee Report*, para 227, p. 68.
[24] Sir H. P. Burt, Sir R. N. Mookerjee, Sir A. R. Anderson, Sir G. C. Godfrey and Sir H. Ledgard.

of a permanent policy was therefore unwise. They were also doubtful about the resources of the Government of India with their additional liabilities since the war to finance railway construction to the extent needed. Emphasizing the dangers of state management, the opinion of the Railway Board themselves was quoted to the following effect :

'(1) Constant transfers of senior officials resulting in lack of continuity in policy ;

'(2) the tendency to give promotion on the grounds of seniority alone without sufficient regard to efficiency or local knowledge ;

'(3) disregard of public opinion ; and

'(4) lack of initiative and flexibility.'[25]

Retention of company management would, it was argued, offer scope for emulation and lead to healthy results on State railways. Further, the close association of the State in the employment of a large labour force would introduce great possibilities of danger and the superiority of private over state management elsewhere in this respect was instanced. These members concluded by rejecting English domiciled companies and recommending two schemes of Indian companies with a rupee capital.

The position of the Indian railways in 1920 and the other recommendations of the Acworth Committee may be conveniently discussed under certain heads. We may take up first the proposals made by them to improve the adequacy of the railway transport system.

Reference has already been made to the difficulties experienced during the war. The Acworth Committee's inquiry offered an opportunity of eliciting public and commercial opinion on the capacity of railways to meet their demands. Public opinion in India had constantly complained of the utter inadequacy of the Indian railway system to meet the needs of the country. The committee stated : 'The evidence given before us in all parts of the country and on behalf of all sections of the community was overwhelmingly strong as to the urgent need of drastic measures of reform and reconstruction

[25] *Acworth Committee Report*, para 254, pp. 74-5.

of the entire railway machine.'[26] In support of this the report reproduced almost twelve pages of extracts from the testimony before them. The gravity of the situation is not easily realized, but some extracts are eloquent enough of the hopelessness of transport capacity during the post-war years.[27] After a review of the evidence collected from every

[26] *Acworth Committee Report*, para 25, p. 7.

[27] Compare the following extracts quoted from the Report, p. 7, et seq. :

Mr. (later Sir Charles) Innes, Secretary to the Goverment of India, Department of Commerce : There is a large demand for Indian coal for export, but in the absence of adequate transport facilities for meeting it, India is missing an exceptional opportunity of establishing itself in the foreign markets where its coal is in great demand.

Mr. Carr, Agent, and others of the Bengal Nagpur Railway : The growing trade of India and the development of the iron and steel industry are hampered by lack of railway facilities and new lines ; 1,100 wagons a day would ultimately be required to meet the total requirements of existing and new works at Jamshedpur and Kulti, as against the present demand of 350.

Mr. Hindley, Agent, East Indian Railway : It is impossible to estimate the loss to trade which would be brought about by the delay in providing essential facilities and the persistent failure to keep the capacity of the lines up to the demands for transportation. The position is already so bad at times that the railway has to restrict or even entirely close down the acceptance of goods traffic. Only one half of the demand for wagons for merchandise can be met. For the past 26 years there has always been an inability to provide transportation to the extent demanded and the position is getting worse day by day....Large quantities of merchandise offered for transportation have frequently to be refused. In one case the European oil seed market was lost definitely owing to the lack of railway transport.

Messrs. Marshall, Dods, Fairhurst, Bury and Martin, Calcutta : The existing railway facilities are entirely inadequate to cope with even the present traffic. There is a serious shortage both of wagons and locomotives for transport of coal and other raw materials as well as of the finished products ; and of facilities for moving the wagons which are available.

Mr. Peat, Chairman, Indian Jute Mills Association, Calcutta : Because of lack of railway facilities for the carriage of coal, seven large jute mills employing 40,000 workers had completely stopped on 14th January, 1921....Frequently no wagons at all were available at dispatching points in the northern jute districts.

Mr. Watson Smyth, Vice-President, Bengal Chamber of Commerce, Calcutta : One firm trading in linseed with a good demand and prices high for early shipment... had in one case some 700 tons of linseed held up at an upcountry station for over four months....A manganese firm...had 300,000 tons of ore in stock. To instance the congestion, at one station there are 70,000 tons which are only being dispatched at the rate of about 3,000 tons per mensem....Not only consumers suffer but the uncertainty of adequate transport is paralysing trade. It is obvious that the whole railway machine is inadequate.

Lieut. Col. Bernardiston, Secretary to the Government of Madras, Railway Department : The Government of Madras estimates an expenditure of some Rs. 30 crores as being required to bring railway communications in Southern India to a state of reasonable efficiency.

Mr. Moir, late Director of Civil Supplies, Madras : There had been a great shortage of rolling-stock and of engine power on the railways while there was an exceptional scarcity of food over a large part of the Presidency. Many complaints were received from licensed exporters that they could not get their rice carried.

Mr. Ross Logan, Acting Agent, South Indian Railway : There is a good deal of overcrowding on certain parts of the line and in certain cases it is necessary for passengers to alight and entrain otherwise than at platforms.

Mr. Shakespear, Upper India Chamber of Commerce : It was common practice for railways to shut down acceptance of goods perhaps for ten days together without even giving notice to the trade.

Mr. C. A. H. Townsend, Director of Agriculture, Punjab : Third class passengers are undoubtedly overcrowded...so much so that practically free fights take place between would-be passengers and those already travelling who do not desire others to get into the carriages....The railway staff maintain an air of majestic aloofness.

quarter and every authority, the Acworth Committee observed : 'Congestion at some time or at some place is a commonplace of railway management in every part of the globe. But in India for years past it has recurred each season ; it has now become normal and it will become permanent unless bold measures are taken to deal with the situation.'[28] Although the complications of the war period account in part for the difficulties experienced, some responsibility must, it was argued, be ascribed to the principles of finance adopted and the financial control exercised by the Government of India. The defects, the committee considered, were primarily due 'to the failure of Government to provide the railways with adequate funds for capital expenditure on development and extensions, and even for the essential operations of renewal and repairs. They are the inevitable results of a paralysing system which has not been adapted and developed to meet the requirements of what is essentially a commercial enterprise of the first magnitude.'[29]

The system as it stood in 1920 is best summed up in the words of the Acworth Committee. Railway finance was tied to the apron-strings of the general budget with the result that net receipts accrued to the benefit of the general revenues of the Government of India. The fluctuations in allotments were not, however, a financial by-product of the war : they obtained even before the war. The committee stated : 'The effect of this policy of inadequate allotments varying irregularly up and down from year to year would have been bad enough in any case. But it is made worse when, as not infrequently happens, the allotment is suddenly cut down during the currency of the year to which it relates, and works in progress are suspended, staff are disbanded at a moment's notice, and materials are left lying on the ground for an indefinite period. An almost equally bad effect is produced when late on in the year, the general financial position

[28] *Acworth Committee Report,* para 27, p. 19.
[29] Ibid., para 28, p. 20.

having unexpectedly improved, the Finance Member with equal suddenness lifts his hand and thus encourages the railways to spend more freely.'[30] It is not surprising that a system with such features as 'lapses' every year or the sudden grant of funds towards the close of the year should inhibit progressive expansion.

The evil was not confined to capital expenditure. It reached with equal effect revenue expenditure. The committee criticised the policy followed with regard to the provision of funds for renewals which were included under the program revenue. 'There are,' they observed, 'scores of bridges with girders unfit to carry train loads up to modern requirements; there are many miles of rails, hundreds of engines, thousands of wagons, whose rightful date for renewal is long over past. Their cost has not been written off. They stand in the books at the original figure. The Government has formed no replacement reserve....The position due to the unwise methods of the past must be redressed gradually. It will never be redressed under the present system of programs and annual grants and lapses, but only when commercial accounting methods are introduced in the management of a commercial undertaking.'[31] Referring to the difficulties during the war period, which must have been to some extent responsible for the situation, the report stated :

'Obviously the expenditure was only postponed, and had to be faced later on. An ordinary commercial concern would, as a matter of course, have carried the money so underspent to a reserve for renewals, to be spent when materials were again available. The independent railway companies did this. Not so the State. The money was treated as part of the ordinary revenue of the Government in the year in which it was not spent, with the result that the net profits of the State railways are shown in the official returns as having risen steadily from 4·54 per cent in 1914 to 7·07 per cent in 1918-9. The apparent gain was not real. Had there been a separate railway budget, the money underspent would have been earmarked in it as advanced to the Government for general purposes. It was indeed announced at one time that a reserve was being made, or would be made.

[30] *Acworth Committee Report*, para 36, p. 21.
[31] Ibid., para 68, pp. 30-1.

The end of the war has come, and the money is not there; other liabilities had been too strong for the Government of India and so the reserve fund vanished. The railway machine is in urgent need of repair, and funds to put it right are not forthcoming. The position at present is this: maintenance is lamentably in arrears. The cost of materials of all kinds is far above pre-war level. Wages likewise have advanced steeply.'[32]

The Railway Department as then constituted also came in for criticism. Administratively the railways were only regarded as of sufficient importance to be entrusted to the control of a Member of Council for Commerce whose portfolio included such widely differing functions as shipping, Assam emigration and peace treaty affairs. The committee urged the appointment of a Member for Communications dealing with railways, ports, inland navigation, road transport, and posts and telegraphs. Turning to the Railway Board, it was found that 'its president has the responsibilities and rights of a Secretary to Government, though he does not bear the title. The other two members have not. And yet as a member, the president is nothing more than the senior amongst three colleagues. Originally he was only *primus inter pares.* There was another period when, though not by legal right, the president was really supreme and the decision of the Board was, in fact, his decision.'[33] As under such conditions it was impossible to fix responsibility under the Member of Council on one man only, the appointment of a Chief Commissioner of Railways was recommended, with the status of a Secretary to Government. The Chief Commissioner was to be assisted by a Financial Commissioner and three Railway Commissioners in charge of three groups into which the Indian railways, it was suggested, were to be divided.[34] The Railway Commission thus constituted was to be assisted by a number of directors for the technical branches. Referring to the reforms then introduced, 'this great constitutional change,' said the Acworth Committee, 'must modify profoundly the responsibility of the Secretary of State for the management of Indian

[32] *Acworth Committee Report,* para 71, pp. 31-2.
[33] Ibid., para 105, p. 39.
[34] Ibid., para 113, p. 41.

railways.'[35] With the transfer of power from the Secretary of State was also recommended a greater devolution of powers to the Railway Commission and the railway administrations.

As regards the relations between railways and their customers, the Acworth Committee commented upon the serious complaints they had received, some of which were in their opinion well founded. They accordingly proposed the constitution of a tribunal somewhat on the lines of the Railway Rates Tribunal in Great Britain. Public opinion was to be afforded opportunities to be heard on matters pertaining to facilities, amenities, etc., by the establishment of central and local advisory councils representing all interests.

These were, briefly, the principal recommendations made by the Acworth Committee in their report. Broadly speaking, the chief contribution of the committee was the new emphasis on the commercial character of the railway undertakings and the importance of operating them on business principles. The developments which followed the publication of the report were directed to attaining this end. This is clear from a perusal of the reports of two committees which were appointed in succession between 1921 and 1923, namely, the Railway Finance Committee and the Indian Retrenchment Committee. These committees threw further light on the conditions of railway working, besides endeavouring to give practical effect to the recommendations of the Acworth Committee. Before proceeding to the changes introduced, it is necessary to refer to the reports of the Railway Finance and the Indian Retrenchment Committees.

RAILWAY FINANCE COMMITTEE

The Railway Finance Committee was appointed pursuant to the resolution passed by the Legislative Assembly on 13 September 1921, to consider the following questions which arose from the Acworth Committee's Report, namely,

(1) the separation of railway from general finance; and

[35] *Acworth Committee Report*, para 125, p. 43.

(2) the requirements of railways in regard to capital expenditure during the next ten years.

On the first question, the committee, in their report issued in December 1921, stated :

'The real difficulty of the proposal to separate the entire railway budget from the general budget of the Central Government lies in the fact that any separation in the sense suggested by the Railway Committee involved the surrender by the Central Government of railways as a source of revenue. We have accordingly concentrated our attention not so much on the question of principle as on the purely practical question whether any such surrender could be effected at the present time or in the immediate future . . . for the present, it is sufficient to express our definite opinion that in the existing state of Indian finances, it would be impracticable to replace this source of revenue, if surrendered for railway purposes. It is material to mention here that when the new financial arrangements necessitated by the Reforms were under consideration, it was assumed that the Central Government would derive a substantial net revenue (after paying interest charges) from railways in deciding upon the amount of the central deficit which would have to be made good initially by contributions from the provinces, Lord Meston's Committee assumed that the Central Government would derive a net revenue of no less than Rs. 10 crores from this source. . . . We have, therefore, been led to the conclusion that separation of railway finance in the sense understood by the Railway Committee is not at present a practical proposition. It may be advisable, when conditions become more normal and financial equilibrium is re-established, to re-examine the question.'[36]

On the second question, the Railway Finance Committee appreciated the gravity of the position delineated by the Acworth Committee. In view of the importance of the recommendations made at this time, the attitude of the Finance Committee on the subject of capital expenditure on railways may be indicated. They said :

'It has been strongly represented to us that the present incapacity of the railways to meet the needs of the country seriously hampers the development of Indian industries. A single example will suffice. It is a matter of common knowledge that shortage of wagons has checked the development of the coalfields ; in spite of this in 1919 the production of

[36] *Railway Finance Committee Report*, paras 5-7.

coal in the Bengal and Behar and Orissa coalfields outstripped transport facilities by more than 2¼ million tons. If this was the position two years ago, it is likely to be much worse a few years hence, unless immediate steps are taken to rehabilitate the railways....With the great development of metallurgical and other industries which may be expected in the near future, the rate of increase is likely to grow rather than to diminish—unless indeed that development is throttled by the failure of these industries to obtain the coal they require. It is not merely a question of buying more wagons and locomotives. Lines must be doubled, bridges strengthened, yards remodelled and the railways generally fitted to handle more traffic. We are greatly impressed by the wastage in the use of existing rolling-stock due to the incapacity of bridges to carry the increased axle loads involved in the use of the newer and heavier types of engines and wagons. Finally the need for a radical increase in the provision of facilities of all kinds for third class passengers is so patent and the demand of the public on this point is so insistent that the matter requires no further emphasis on our part.'[37]

On these grounds the Railway Finance Committee considered the case for the provision of larger capital funds for the immediate rehabilitation and betterment of existing lines to be amply proved, and endorsed the demands of the railway administrations for sufficient funds for the completion of works under construction. To prevent the evils of fluctuation in the supply of funds, the committee recommended that

'the program should be prepared on a five-year basis, the provision for each quinquennial period being considered about two years before the termination of the existing period. The maintenance of such a program necessarily implies that there should be no lapse of money voted for any one year but not spent within that year; such sums should be carried to the credit of the railway administration up to the limit of the total amount fixed for the quinquennium.'[38]

After duly considering all the factors involved, the Railway Finance Committee concluded that 'funds to the extent of Rs. 150 crores should be devoted to railway capital purposes during the next five years' to be spent exclusively on rehabilitation and the completion of lines already under construction.[39]

[37] *Acworth Committee Report*, para 8.
[38] Ibid., para 40.
[39] Ibid., para 10.

These recommendations were accepted by the Legislative Assembly in March 1922, except with regard to the question of separation of railway from general finance. The Government of India and the Secretary of State also agreed to the proposal and Agents were instructed to prepare their quinquennial programs.

THE RETRENCHMENT COMMITTEE

About this time the financial position of the Government of India was in a serious state on account of the unfavourable balance of trade during 1920-1 and 1921-2, and the financial strain involved in the creation of the reformed provincial governments. The economic conditions were reflected in the railway traffic receipts which declined, and for the first time since 1900 railways failed to contribute anything to the Central Government and produced a deficit of over Rs. ·9 crores. The need to effect economies and increase revenue was imperative, and the Government of India appointed the Indian Retrenchment Committee[40] with Lord Inchcape as chairman in 1922. Railways were expected to contribute no less than Rs. $10\frac{3}{4}$ crores by the Meston Committee and the unexpected deterioration in railway receipts threatened to render the railways a source of considerable liability to the Central Government. It is therefore not surprising that the Inchcape Committee paid particular attention to the problems of railway finance.

The committee, first of all, stated the principles according to which the State-owned railways should be operated. They observed :

> 'The country cannot afford to subsidize the railways and steps should be taken to curtail working expenses as necessary in order to ensure that not only will the railways as a whole be on a self-supporting basis, but that an adequate return should be obtained for the large capital expenditure which has been incurred by the State. We consider that, with economic working, it should be possible for railways in India to earn sufficient net receipts to yield an average return of at least $5\frac{1}{2}$ per cent on the total capital at charge. The average return to the State during the three

[40] Hereinafter referred to as the Inchcape Committee.

years prior to the war was 5 per cent, and in view of the fact that large amounts of additional capital are being raised at 6 per cent or over, we think a return of 5½ per cent cannot be regarded as excessive.'[41]

The Inchcape Committee next attacked the provision of Rs. 150 crores to be spent in five years, which, they said, did not assist matters, as

'this money can be utilized only for new works or to pay the cost of improvements carried out in connexion with renewals, which represents only a small portion of the total cost of such renewals. It cannot be expended on repairs or for overtaking arrears of renewals, the cost of which is borne entirely by working expenses.'[42]

In view of the financial stringency and the large capital expenditure which was being incurred, it was considered that the overtaking of these arrears might well be postponed on railways not able to earn sufficient receipts to pay interest and sinking fund charges. The Inchcape Committee stated:

'The real question to be decided is whether, when capital is so urgently required by some railways for remunerative purposes, the country can afford to borrow large sums of money at the present high rates for expenditure on railways which are not only unable to earn 5 per cent on their present capital, but which have to be subsidised by the general taxpayer. We consider that further expenditure on such railways can only be justified if it can be satisfactorily demonstrated that this expenditure will increase the net earnings of the railways sufficiently to cover the additional interest involved.'[43]

The Inchcape Committee next endorsed the Acworth Committee's recommendations for the appointment of a Financial Commissioner of Railways, the institution of some form of depreciation fund, decentralization of control, and an investigation into the railway accounting system by qualified experts with foreign experience. The other recommendations and observations of the Inchcape Committee will be referred to later when dealing with the later developments. The summary attempted here reveals in the Inchcape Report an attitude different in tone and emphasis from that of the Acworth and the Finance Committee. In one sense the Inchcape

[41] *Inchcape Committee Report*, para 5, p. 91.
[42] Ibid., para 6, p. 92.
[43] Ibid.

Committee applied what in the light of later experience turns out to have been a valuable corrective to the expansionist tendencies of the previous reports. In other respects their recommendations were complementary.

The three years 1920-1 to 1922-3 had witnessed such ruthless analyses of the railway situation that they probably had the effect of exaggerating the defects in the working and administration of railways. But there can be no doubt that the repeated emphasis on the changes desired accounts largely for the expedition with which the reorganization was attempted and carried out. It must, however, be stated that certain of the criticisms of the Inchcape Committee were not well founded. The charges based on the comparison of the results for two years were hardly fair, as they took little account of the fact that working expenses were swollen by the sums expended in overtaking arrears of maintenance and renewals, the effects of which had not yet begun to be felt. Again, the reduction through their recommendations of the revenue expenditure upset the full utilization of the capital lumpsum provided for rehabilitation during the quinquennium, thus seriously dislocating the programs which had then been completed, and limiting the money spent on open lines and rolling-stock to less than Rs. 88 crores during the period 1922-7.

The factors which affected railway finance during the early post-war years were many. The prices of all materials had risen to unprecedented heights. The temporary enhancements in the wages bill had to be replaced by permanent revisions of scales in or by 1920. The advance on the pre-war scales of pay amounted from 20 per cent in the case of the higher paid staff to over 150 per cent in the case of lower subordinates and inferior employees who always accounted for a major portion of the labour costs. As if these were not bad enough, the average rate of interest which had been less than 3½ per cent rose to over 6 per cent on the capital raised after 1916-7. The effect of this as well as the large outlay on rehabilitation led to an increase of more than Rs. 5 crores on

account of interest alone as compared with the position during 1913-4. As against these factors which forced up working expenditure, rates and fares had not advanced to anything like the same extent.

ADMINISTRATIVE REFORMS

We may now proceed to consider the action taken on the recommendations of the committees which had investigated the railway situation during 1920-3. The Acworth Committee had recommended the appointment of a Member of Council for Communications and a Chief Commissioner and three other commissioners. The Government of India did not agree to the appointment of an independent Member for Communications but approved of the reorganization of the Railway Board on the lines of the recommendations of the Acworth Committee. The appointment of a Chief Commissioner was made in November 1922 and his status was raised as suggested by the committee. Accordingly the new Chief Commissioner, it was stated, 'is solely responsible—under the Government of India—for arriving at decisions on technical matters and for advising the Government of India on matters of railway policy, and is not, as was the President, subject to be outvoted and overruled by his colleagues on the Board.' [44]

Mr. (later Sir) C. D. Hindley was appointed to this post and his first duty as Chief Commissioner was to work out detailed proposals for the reorganization of the Railway Board. The appointment of a Financial Commissioner was urged by both the Acworth and the Inchcape Committee and early appointment to this post was requested by the Chief Commissioner. The appointment was made in April 1923 with the sanction of the Secretary of State. The Railway Board as reconstituted towards the end of the year 1923-4 consisted of the Chief Commissioner, the Financial Commissioner, and two Members. The territorial distribution of work recommended by the Acworth Committee was abandoned in favour

[44] *Indian Railways*, 1922-3, Vol. I, p. 5.

of a functional division. Four directors in charge of civil engineering, mechanical engineering, traffic and establishment were created, to leave the commissioners and members of the Railway Board free of routine duties to devote greater attention to larger questions of railway policy and to keep in touch with Local Governments, railway administrations and public bodies. The technical staff, the directors, it was stated, 'are not merely advisers or consultants, but are actually responsible for dealing with...proposals of new works and projects, with traffic problems which come to Government for settlement, with technical standards, questions of safety and inspection, and problems connected with personnel.' [45] The difficulty with the former Railway Board was over-centralisation which overwhelmed them with detail to the detriment of the prompt disposal of the larger problems. This defect was sought to be removed in the reorganization by a policy of decentralization of powers to agents of state-managed railways and boards of directors of company-managed railways.

SEPARATION OF FINANCE

We have seen how the proposal to separate railway finance from general finance was postponed from time to time. When the Acworth Committee recommended the institution of an independent railway budget, they referred to the liabilities which the railways would have to assume and expressed their opinion as follows :

> 'Whether the railways should pay precisely this amount (the interest charges) or a larger amount... in consideration of the expenditure which the railways have incurred for non-railway purposes is a matter for argument. We have no wish to express a positive opinion though we think that there is much to be said for letting bygones be bygones and fixing the payment to the Government at the same sum that the Government has itself to find at the present time for interest on railway debt. The point is that the Railway Department, subject to the general control of Government, once it has met its liability to its creditors, should itself regulate the disposal

[45] *Report by the Railway Board on Indian Railways* 1923-4, Vol. I, p. 6. This title has been retained since that year, and the publication will be referred to hereinafter as *Railway Board's Report.*

of the balance, and should be free to devote it to new capital purposes (whether directly or as security for new debt incurred), or to reserves or to dissipate it in the form either of reductions of rates or improvement of services. We have expressed our own view that the only payment by the railways to the general exchequer should be the interest at a fixed rate on the capital advanced.'[46]

In dealing with this important recommendation, the Railway Finance Committee, as we have seen already, took a different attitude towards the proposal of a separate railway budget in view of the then state of general finance and suggested postponement of the consideration of the question for some time and examining it again when conditions became normal and financial equilibrium was re-established. They referred, however, to certain problems which would have to be settled before the question of separation was decided. Their report stated :

'It would, of course, be necessary to discuss certain questions of principle which for the reasons given we have now avoided, such, for example, as the extent, if any, to which general revenues are entitled to benefit from the net profits made by railways, how the capital at charge and the liability in respect of interest charges should be assessed, whether any deduction should be made from that capital in respect of strategic railways, how far the control of the Assembly over the budget as a whole would be affected by such separation, and whether the railway administration would be justified in utilizing, or indeed whether it would be economically sound to utilize, surplus railway revenues for capital expenditure.'[47]

The proposal was left at that stage till 1923, when the Railway Board, while dealing with the Inchcape Committee's recommendation that railways should be so worked as to yield an average return of at least five per cent on the capital at charge, reopened the whole question of the separation of railway finance. The detailed proposals of the Railway Board were to the effect that the Government should receive from the railways interest on the capital invested on railways, with the exception of the strategic railways, together with a fixed annual dividend of five-sixths of one per cent, and a share of

[46] *Acworth Committee Report*, para 74, pp. 32-3.
[47] *Railway Finance Committee Report*, para 7.

any surplus profits. The dividend, according to the Railway Board's proposal, was to be an 'accruing charge which, if not paid off in any one year owing to temporary causes, must be met in another.' [48] In view of the difficulties experienced, such as amending Section 67-A of the Government of India Act, the scheme was laid before the Central Advisory Council for Railways, and thereafter submitted to the Legislative Assembly on 3 March 1924, in the form of a resolution establishing a convention to this effect with the Legislative Assembly. The solution suggested, it was explained,

> 'does not give that full measure of security that the railway administration requires if it is to regulate its working on a commercial basis and is to be in a position to balance gains and losses over a series of years ; but if the Assembly is convinced of the necessity of having a convention of this nature and agrees to it, it may be assumed that no attempt will be made subsequently to upset the convention. The convention, if adhered to, will secure the main object, viz., (*i*) a stable return to the general revenues from railways, and (*ii*) the carrying out of a railway policy based on the acceptance of responsibility for obtaining a fixed dividend accompanied by the assurance to the railway administration that funds will be forthcoming for any operation which will secure such dividend and that any surplus will be available for railway purposes.'[49]

The resolution was referred to a committee of the House, who, unable to deal with it in the time at their disposal, postponed it to the next session. In August 1924, the committee issued their report recommending that the fixed contribution to the general revenues should be raised from five-sixths of one per cent to one per cent on the capital at charge of the commercial lines. To this was to be added one-fifth of any surplus profits. They proposed that if the amount available for transfer to the railway reserve after payment of the above contribution should exceed three crores of rupees in any one year, one-third of the excess should also accrue to the general revenues. The committee also agreed to the proposals of Government on the financial side, but asked for alterations in the constitution of the Central Advisory Council to provide for the

[48] *Railway Board's Report* 1923-4, Vol. I, p. 8.
[49] Ibid., p. 90.

selection of its members from panels set up by the Council of State and the Legislative Assembly from amongst their members and for the creation of a Standing Finance Committee, consisting mainly of the members of the Legislative Assembly. They further stated that the estimates of railway expenditures should be first approved by this committee before the introduction of the demands for grants in the Legislature, and that the railway budget should be introduced before the general budget, and separate days allotted for its discussion. These proposals were accepted by the Government, but the question was raised whether, as a condition for the acceptance of the proposals by the Assembly, Government should not give assurances with regard to Indianization of the services, representation of Indians on the Railway Board, and the purchase of stores for railways. An undertaking was also demanded that no railway was to be handed over to a private company without the prior approval of the Legislative Assembly.[50] The report of the committee came up before the Assembly in the middle of September 1924, and after a good deal of debate, an agreement was formally reached on 20 September. According to the agreement,

> 'Government undertook that the arrangements for separation should hold good only so long as the East Indian Railway, the Great Indian Peninsula Railway and the existing state-managed railways remained under State management; that no negotiations for the transfer of any of these railways to company management should be concluded until facilities had been given for the discussion of the whole matter in the Assembly; and that, further, if any of the above railways were transferred to company management, against the advice of the Assembly, the Assembly should be at liberty to terminate the arrangements for separation.'[51]

The resolution supporting the proposal for the separation of finance as passed by the Assembly stood as follows:

> 'This Assembly recommends to the Governor-General in Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the Railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of

[50] *Railway Board's Report* 1924-5, Vol. I, p. 2.
[51] Ibid.

making a definite return to general revenues on the money expended by the State on railways :

(1) the railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways ;

(2) the contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year *plus* one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent on the capital at charge, surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good; the interest on the capital at charge of, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year ;

(3) any surplus remaining after this payment to general revenues shall be transferred to a railway reserve ; provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees, only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues ;

(4) the railway reserve shall be used to secure the payment of the annual contribution to general revenues ; to provide, if necessary, for arrears of depreciation and for writing down and writing off capital ; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates may be reduced ; and

(5) the railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years.'

These arrangements under the convention established in accordance with the resolution were, it was provided, subject to revision, and were to be provisionally tried at least for

three years. It was further stated that the convention was to hold good only 'so long as the East Indian Railway and the Great Indian Peninsula Railway and the existing state-managed railways remain under State management.' If Government entered into negotiations to transfer any of these lines to company management, they were not to be completed before they had been discussed by the Assembly. If the advice of the Assembly was rejected, it was provided that the Assembly would be at liberty to terminate the arrangements made in accordance with this resolution. Finally, the Assembly also recommended a rapid Indianization of the railway services and a policy of purchasing stores through the Indian Stores Department.

Thus was accomplished what is probably the most important reform introduced during the present century in connexion with the administration of Indian railways. The separation of the railway budget might not have been effected so soon but for the pressure of certain problems which did not brook any postponement. The approaching termination of the contracts with the East Indian and Great Indian Peninsula Railway Companies had rendered a decision on the general question of state versus company management imperative, and in February 1923, the Legislative Assembly was able to carry a resolution recommending state management on both the lines on the expiry of their contracts. The Government of India were not, however, fully in agreement, and while conceding that the present system was unsatisfactory, they proposed 'to continue their efforts to devise a satisfactory form of companies domiciled in India to take these railways over, eventually on the basis of real company management.' The Separation Convention which was adopted on 20 September 1924, removed apprehensions of the dangers to which state management is exposed, and on 1 January 1925, the State took over the management of the East Indian Railway. The contract concerning the Great Indian Peninsula Railway terminated on 30 June 1925, and arrangements were made to bring it also under direct state management.

Thus was brought to a close a period of hesitancy and unwillingness on the part of the Government to assume responsibility for the direct operation of its own railways. Up to this time, the Government had worked only those railways which, because of their unremunerative character, had kept away companies from them. The year 1925 marked the date on which the State accepted responsibility for operating the paying lines to a standard of efficiency and success not inferior to company management. The effect of the changes during the period 1920-4 and the introduction of a separate railway budget on the railway organization and policy was to emancipate the Indian railways from the trammels of the Finance Department. They implied a freedom to initiate and carry out policies governed by business principles; they also helped to inaugurate further changes and ventures on a scale not previously attempted. The character and consequences of these developments need to be studied, as the Indian railways constitute the largest single undertaking in the country and have a profound influence on its economic life. Further, the success of the attempt at state operation itself needs to be carefully appraised. The advocates of the policy of industrial development of the country looked to the railways for encouragement and active support. The growing insistence on increasing industrialization is amply borne out by the expansion of the older industries and the development of new ones during recent years. These are but a few of the problems raised in connexion with our railways during the last two decades.

It is proposed to examine, in the succeeding chapters, the principal developments during the post-separation period. While attention is focussed chiefly on this period, perspective has not been sacrificed. The answer to certain of the important questions raised here cannot be given before the close of our survey. The subject of capital expenditure is taken up in the next chapter by reason of the importance attached to it in connexion with the rehabilitation and adequacy of our railway equipment both prior to, and immediately after, the year 1924.

CHAPTER II

CAPITAL EXPENDITURE DURING THE POST-WAR PERIOD

As the problems encountered during the early post-war years were concerned to a large extent with those of rehabilitation, modernisation and construction, expenditure on capital account on a considerable scale on many kinds of projects and schemes was the principal feature of railway finance during the post-separation years. It is necessary at the outset to refer to the Indian railway system as it stood in 1924.

CLASSIFICATION OF INDIAN RAILWAYS

Indian railways have been generally classified under fifteen heads in the administration reports of the Railway Board according to their relation to the Government of India as regards financial control. Their relative importance in length

of milage, capital, gross earnings and net earnings will be clear from the figures shown in Table 2.

TABLE 2. INDIAN RAILWAYS GROUPED ACCORDING TO METHODS OF WORKING ON 31 MARCH 1924

(*Rs. in crores*)

	Classification	Route milage	Capital at charge Rs.	Gross earnings Rs.	Net earnings Rs.
(1)	State lines worked by State	7,678	185·98	24·12	6·57
(2)	State lines worked by companies	19,286	452·87	70·26	26·85
(3)	Branch line companies' railways under guaranteed terms worked by branch line companies	196	1·44	0·11	0·03
(4)	Branch line companies' railways under guaranteed terms worked by main line	115	0·81	0·12	0·06
(5)	Branch line companies' railways under rebate terms worked by main line	1,981	13·85	2·46	1·20
(6)	Branch line companies' railways under guaranteed rebate terms	167	1·82	0·15	0·07
(7)	Companies' lines subsidized by Government of India	2,170	17·16	3·07	1·62
(8)	Companies' lines subsidized by local governments	137	1·75	0·37	0·11
(9)	Unassisted companies' lines	70	0·38	0·04	0·01
(10)	District board lines	271	1·49	0·36	0·16
(11)	Companies' lines subsidized by district boards	306	1·51	0·36	0·16
(12)	Indian State lines worked by Indian States	3,054	15·86	2·63	0·78
(13)	Indian State lines worked by main lines	1,780	11·24	1·86	0·78
(14)	Companies' lines guaranteed by Indian States	754	9·64	1·72	0·88
(15)	Lines in foreign territory worked by British Indian railway companies	74	2·15	0·18	0·07
	TOTAL ..	38,039	717·93	107·80	39·35

These fifteen groups were arranged at the instance of the Acworth Committee into three broad divisions for statistical purposes: Class I railways with gross earnings of Rs. 50 lakhs and over a year; Class II railways with gross earnings of less than Rs. 50 lakhs and over Rs. 10 lakhs a year; and Class III railways with gross earnings of Rs. 10 lakhs and

under a year. The relative magnitude of the three classes may be seen from the following figures as on 31 March 1924 :

Class	Route milage	Capital outlay (Rs. in crores)
I	34,761·65	694·54
II	1,868·06	14·40
III	1,408·81	6·87
TOTAL ..	38,038·52	715·81

The Class I railways, it will be noticed, constitute by far the largest of the three groups and will receive in the present work the principal attention. The railway systems[1] comprised in this group are :

(1) Assam Bengal Railway
(2) Bengal and North-Western Railway
(3) Bengal Nagpur Railway
(4) Bombay Baroda and Central India Railway
(5) Burma Railways
(6) Eastern Bengal Railway
(7) East Indian Railway (including the Oudh and Rohilkund Railway)
(8) Great Indian Peninsula Railway
(9) Jodhpur Railway
(10) Madras and Southern Mahratta Railway
(11) Nizam's State (Guaranteed) Railway
(12) North-Western Railway
(13) Rohilkund and Kumaon Railway
(14) South Indian Railway.

For purposes of statistical analysis, the Class I railways have been further subdivided according to the gauge. A large proportion of the milage of these railways comes under the broad gauge, and the bulk of the remaining milage under the metre gauge. The balance constituting a small fraction represents the narrow gauge lines.[2]

[1] Reference to the individual railways in the succeeding pages will be made by their initials only.

[2] The relative proportion of the route milage of the Class I railways under the three gauges may be seen from the following figures as on 31 March 1924:

	Class I railways	All railways
Broad gauge (5′ 6″)	18,640	18,640
Metre gauge (3′ 3″)	14,159	15,659
Narrow gauge (2′ & 2′ 6″)	1,962	3,739
Total ..	34,761	38,038

The State has a large financial stake in the Class I railways. All the systems included in this group with the exception of the Bengal & North-Western, the H. E. H. The Nizam's State, and the Rohilkund & Kumaon, were State-owned. To these must be added the state lines worked by these private railways, namely, the Tirhoot section worked by the Bengal & North-Western and the Lucknow-Bareilly section worked by the Rohilkund & Kumaon.

IMPORTANCE OF CAPITAL EXPENDITURE

It is necessary to appreciate the full implications of the works programs of railways. The railway industry presents a unique integration of a number of factors to render the highly specialized function of inland transport. The apparatus which it uses is the most elaborate of all industrial undertakings. The permanent way, banks, bridges, tunnels ; stations, termini, marshalling yards, sheds, signals ; locomotives, coaching vehicles, goods wagons, steam coaches, diesel cars, rail motors ; huge workshops for construction, assembly, repairs and reconditioning of railway plant and machinery ; all these operated by an army of employees, supervisors and executives, roughly indicate the nature of the concrete machinery of a railway undertaking.[3]

Railways have played an important part in construction of all kinds. From the stage when the voids of vast regions are explored, surveyed and gridironed with railway facilities right down to the process of keeping the elaborate apparatus at work, large sums are spent. Increase of population, development of new territory, growth of large-scale industries and the consequent demand for rail transportation lead to the construction of new lines. A progressive railway system calls for increasing expenditure. Augmentation of traffic and greater density of movement must be met by additional trains,

[3] As Prof. F. W. Taussig observed : 'A railway's plant is large relatively to that in most industrial units . . . . A manufacturing plant in which the plant merely equalled in value the annual output would be regarded as having a relatively large fixed investment ; how much more the railway in which the plant is five or ten times as great in value as the annual turnover.' *Principles of Economics*, Vol. II, p. 421, fourth edition.

inprovements in marshalling yards, larger station facilities, modernised signalling, heavier engines, strengthening of the permanent way, bridges, etc., and a corresponding enlargement of workshop capacity. The very maintenance of railway property in efficient condition involves periodical outlays of large sums of money. With the development of towns and suburbs, passenger and goods traffic outgrows the original provisions for convenience and economical handling at terminal stations. Railways contribute through remodelled termini, monumental examples of the builder's art, the engineer's skill, and architectural beauty without sacrificing utility, which is the principal object of construction. The diversity of materials required to provide the railway plant and equipment indicates the very wide range of industries affected and the railways' contribution to industrial activity in general.

POST-WAR REHABILITATION PROGRAM

The capital program of Indian railways since 1924 has been one of the most important developments made possible by the new financial autonomy conferred on them under the Separation Convention. The policy started in 1924-5 was pursued with great effect till 1932, when it had to be abandoned on account of the severe financial stringency which followed the depression. The twelve years beginning with the year of the separation fall into two clearly defined periods : the first six years, 1924-30, a period of great prosperity all round ; and the second, from 1930 onwards, during which was witnessed the gradual impact of the depression and the sudden reversal of the fortunes of the railways. From the standpoint of revenue and profits, the two periods represent a clear division of the years of surpluses and of deficits. But as regards the policy of capital expenditure and works programs, it is advisable to extend the earlier period down to the close of the financial year 1931-2. The momentum of six years could not be arrested abruptly, and the adjustment of the works programs to the

pressure of depression finance took nearly two years to allow for the completion of the projects already started. In dealing with the policy of capital expenditure, the present chapter covers the period of eight years from 1924-5 to 1931-2.

The capital at charge of Indian railways at the end of the financial year 1923-4 amounted to Rs. 717·93 crores, and this figure rose to Rs. 876·34 crores on 31 March 1932. If private-owned railways are excluded, the State-owned railways accounted for an increase from Rs. 641·76 crores in 1924 to Rs. 789·79 crores in 1932. The progress of expenditure on capital account during this period is shown in Table 3.

TABLE 3. CAPITAL AT CHARGE OF THE INDIAN RAILWAYS AS ON 31 MARCH, DURING 1924-37*

(*In crores of Rs.*)

Year	State-owned railways	All railways	Year	State-owned railways	All railways
1924	641·76	717·93	1931	783·32	869·81
1925	655·21	733·37	1932	789·79	876·34
1926	675·23	754·32	1933	797·26	884·91
1927	701·07	788·67	1934	795·21	884·41
1928	733·45	822·86	1935	795·44	885·47
1929	739·26	831·39	1936	789·17	879·57
1930	770·13	856·75	1937	789·02	880·13

* *Railway Board's Reports*, Vol. II, for each year.

The actual expenditure incurred during this period was, therefore, Rs. 148·03 crores on State-owned railways and Rs. 158·41 crores on *all* railways. Not all this capital, however, was spent on works. Part of the increase is to be attributed to the liabilities on account of the purchase of railways in accordance with the policy of State acquisition of company-managed lines. Expenditure under this head is essentially in the nature of a transfer of proprietorship and of the liability therefor. Quite different is the case of the expenditure of funds on improvement of existing lines and the construction of new railways. Here one is faced with questions of financial and economic justification. Attention in what follows, therefore, is directed to that part of the

expenditure on capital account which falls within the scope of the second category. As the State-owned railways represent 90 per cent of the total capital on railway account, the policy followed in connexion with these railways alone is discussed in this chapter, except when there is reference to the contrary.

Three factors chiefly contributed to the prodigious expansion in construction activity during the post-war decade. Firstly, the most urgent problem before the Indian railways after the war was one of immediate rehabilitation. We have already seen, in the last chapter, how the Acworth Committee[4] drew pointed attention to the dilapidated condition of railway equipment. Secondly, there was the problem of enlarging the capacity of the railway plant. As the Railway Finance Committee remarked, the incapacity of the railways to meet the needs of the country was not merely a question of buying more wagons and locomotives : the use of heavier types of engines and better wagons, in order to increase the capacity of the railways, implied that the lines must be doubled, bridges strengthened, yards remodelled and improvements carried out throughout the line.[5] Thirdly, the construction of new railways and extensions to existing railway systems, which could not be undertaken owing to war-time restrictions and financial stringency, had to be considered. The programs prepared to carry out rehabilitation, extensions and construction received fresh impetus after the separation of finance in 1924. These three types of improvements and additions will be taken up in order.

PROGRAM REVENUE EXPENDITURE

The importance and urgency of large expenditure on open lines were stressed more than once by the railway committees and the Indian railway authorities from 1921 onwards. The almost derelict condition in which the Indian railways emerged from the war was adversely commented upon by every one who had to deal with them. To analyse and interpret the

[4] *Acworth Committee Report,* para 68, pp. 30-1.
[5] *Railway Finance Committee Report,* para 8.

policies that took shape after 1924, it is necessary to start from 1920-1.

In 1919-20 an amount of Rs. 14·05 crores was spent on open lines including rolling-stock. In 1920-1 the total grant budgeted for was Rs. 22½ crores, but actually Rs. 21·94 crores were spent. As Government finances deteriorated abnormally in the succeeding year, the Finance Member was able to allot for a total capital expenditure of only Rs. 15 crores, as against Rs. 22½ crores in the previous year. Mr. Malcolm (later Lord) Hailey, introducing his budget estimates for 1921-2, said:

> 'Indeed, we have felt some hesitation as to whether we could justly find even this figure, but anything less than this will so restrict the provision of necessary renewals, and of new rolling-stock, as to react very seriously upon the carrying capacity of our railways. I am fully aware that in many circles this provision will be regarded as inadequate. I realize also that it would be a penny-wise and pound-foolish policy to kill the goose that lays for the taxpayer so many golden eggs. Nevertheless, in the opinion of Government, great as are the interests concerned in a progressive railway policy, the interests of the country as a whole are greater, and in the long run it will be to the latter's interests, and, indeed, to those of the railways themselves, that we should first clear the way by putting our finances in such a position that they will in future be able to bear the burden of larger capital expenditure in various directions of development, of which railway development is no doubt the most important.'[6]

But the further loss in exchange and, to a smaller extent, additional provision for urgent works and stock and the local purchases of materials for revenue works raised the actual expenditure on capital account for 1921-2 by Rs. 8 crores to Rs. 22·96 crores. Of this the open line expenditure, including rolling-stock, amounted to Rs. 14·56 crores and the loss by exchange to Rs. 6·98 crores.

[6] *Budget for 1921-2*, para 39, p. 23. The fluctuations of the Indian exchange reduced the difference between the grants to a much smaller figure. As a large proportion of the expenditure was incurred in England for the purchase of materials, exchange did play a more important part than might be imagined, especially at a time of instability in the foreign exchange. During 1920-1 budget anticipations were based on an average rate of over 2*s*, and consequently the financing of a capital grant of £22½ millions should have required a rupee expenditure of only Rs. 19 crores. For 1921-2, an average rate 1*s*. 8*d* was assumed and the capital program of £15 millions required a rupee expenditure of only Rs. 18 crores, so that in actual expenditure of rupees the difference was only over a crore.

The financial year 1922-3 was important for Indian railways. Even while the Acworth Committee's devastating criticisms of the demoralising effect of Government's financial policy on the progress of improvements and extensions to the railways were still fresh in the public mind, the Finance Member had had to confess that the imperative needs of State finance curtailed the provision of funds available for railway rehabilitation. This fact must have bulked large in the minds of the Railway Finance Committee of the Central Legislature who dealt with this problem in their report.

The Railway Finance Committee considered 'the case for the provision of larger capital funds for the immediate rehabilitation and betterment of existing lines amply proved.' As it was uneconomical to refuse funds to the railway administrations to complete works then under construction, the committee stated that these requirements must, in their opinion, take precedence of any demands for the construction of new lines. Impressed with the necessity for allowing railway administrations to proceed with operations of improvement and betterment on a fixed program, they declared : 'Indeed, we go so far as to say that a guaranteed program extending over a course of years is almost as important as the provision of larger funds.' The idea of a ten-year program was rejected on the ground that from neither the financial nor the administrative point of view was it practicable to look so far ahead. Instead, a five-year program was recommended, the provision for each quinquennium being considered about two years before the termination of the existing period. 'The maintenance of such a program,' the committee concluded, 'necessarily implies that there should be no lapse of money voted for any one year but not spent within that year ; such sums should be carried on to the credit of the railway administration up to the limit of the total amount fixed for that quinquennium.'[7]

As regards the extent of the program, the committee kept two considerations in mind : first, the actual needs of the

[7] *Railway Finance Committee Report*, para 10.

open lines for rehabilitation and improvement; and second, 'the commitments of Government in regard to other capital liabilities and the probable capacity of the money markets to supply the necessary loan funds.' As regards the minimum requirements of open lines during the next five years, they accepted the Railway Board's estimates,[8] which were as follows:

		(Rs. in crores)
(1)	Wagons	48½
(2)	Coaching stock	18
(3)	Engines	30
(4)	Strengthening track and bridges ..	10
(5)	Doubling lines	12½
(6)	Yard and station facilities	20
(7)	Workshops	10
	TOTAL ..	149

The Government undertook that 'the program was to be strictly adhered to subject to the understanding that a war or other unforeseen contingency radically disturbing the money market might render it necessary to curtail the operations of any one year.'[9] The entire amount was to be devoted to the rehabilitation and improvement of existing lines, special stress being laid on the improvement of the conditions of travel of third class passengers and to the completion of lines already in hand. There was, further, to be no lapse of money voted for any one year but not spent within that year, and such sums were agreed to be carried to the credit of the railway administrations from year to year to the end of the quinquennium.

The acceptance of the principle of leaving the railways to work up to a five-year program with the provision of adequate funds made a great change in the situation. We may now proceed to examine how the new policy worked in the last two pre-separation years, 1922-3 and 1923-4.

According to the new program, a grant of Rs. 30 crores was made in the budget for 1922-3, consisting of Rs. 18·76

[8] *Railway Finance Committee Report*, para 11.
[9] *Budget for 1923-4*, p. 121.

crores for open line works and Rs. 2·01 crores for completion of lines under construction, the balance of Rs. 9·23 crores being the estimated amount required for exchange adjustments. Owing to the delay in the delivery of materials and, to a smaller extent, to the fall in prices, expenditure fell short of the allotment by Rs. 8·64 crores, which was carried to the next year. The allotment for 1923-4 was also Rs. 30 crores and to this was added the unutilized balance of the previous year, thus making up a total of Rs. 38·64 crores. Of this amount Rs. 26·33 crores were allocated to the open lines, Rs. 2·80 crores to lines under construction, and Rs. 9·50 crores to exchange adjustments. The actual expenditure as compared with the budget estimates stood as follows :

(In crores of Rs.)

	1922-3		1923-4		1924-5	
	Budget	Accounts	Budget	Accounts	Budget	Accounts
(1) Open lines	18·76	11·18	26·34	17·30	19·98	10·07
(2) Lines under construction :						
Of previous years	2·01	2·01	2·80	1·79	2·31	2·73
Of current year	..	0·05	..	4·47	2·70	0·66
(3) Exchange	9·23	5·20	9·50	1·70	5·01	..
TOTAL ..	30·00	18·44	38·64	20·80*	30·00	13·46†

* This figure is net after allowing for suspense, Rs. 336 lakhs.
† Source : *Budgets for 1922-3 to 1925-26.* Includes on account of exchange Rs. 233 lakhs and allows for suspense account of Rs. 559 lakhs.

It is clear from the figures of actual expenditure that the budget anticipations were far more optimistic as to spending money than the capacity of railways in fact proved. During the two years 1922-4,[10] after the adoption of the program of Rs. 150 crores, an allotment of Rs. 60 crores was made, out of which the railways could spend only just under two-thirds, namely, Rs. 39·24 crores. If we include the figures for 1924-5 also in this calculation, the railway administrations could, against a total grant of Rs. 90 crores, spend only a little over one-half, namely, Rs. 52·70 crores. Looking back

[10] The reference is to the financial years 1922-3 and 1923-4. Unless otherwise stated or implied in the context, similar expressions of dates in the following pages should be understood to refer to the financial years.

now to a period separated by more than twenty years, one might well envy the lot of those whose fault appeared to be an incapacity to spend the allotted grant to the full. Indeed, the Railway Board were almost apologetic in their explanations regarding the dilatoriness in spending the funds and carrying out the programs. Thanks to a conservative accounting system, the danger of ill-advised expenditure, however heartily supported by public opinion at the time, was avoided. A brief reference to the program revenue expenditure of Rs. 150 crores may be made before dealing with later developments.

There was some confusion of thought as regards the expenditure of the Rs. 150 crores of new capital. As the Inchcape Committee pointed out, 'the provision of Rs. 150 crores to be spent in five years on the rehabilitation of the railways does not assist matters. This money can be utilized only for new works or to pay the cost of improvements carried out in connexion with renewals, which represents only a small portion of the total cost of such renewals. It cannot be expended on repairs or for overtaking arrears of renewals, the cost of which is borne entirely by the working expenses.'[11] In other words, one has, in a rehabilitation program, to consider not only the capital program, but the revenue program as well. These are interdependent, and a guarantee of capital funds such as the Assembly had given is in itself insufficient without a corresponding guarantee that funds for the concurrent revenue expenditure are also forthcoming. The true implications of the program revenue expenditure of Rs. 150 crores were not at first fully realized. Such a program was in reality one for spending a total sum, not of Rs. 150 crores, but of Rs. 212 crores on the rehabilitation of the railways, the additional Rs. 62 crores being the revenue portion of the program.[12] For example, when renewals are to take place with heavier rails or the existing locomotives are being replaced by a more powerful type to meet the requirements of traffic, that portion

[11] *Inchcape Committee Report*, para 6, p. 92.
[12] *Budget for 1924-5*, para 3, p. 127.

of expenditure which represents the cost of mere replacement or renewal on existing standards must be met from current revenues. There is, therefore, a very close relation between capital and revenue expenditure on projects of rehabilitation and improvement. The ratio of revenue to capital expenditure on each project naturally varies, but for purposes of the Rs. 150 crores program it was estimated to have been approximately 2 : 5. On this reasoning, taking the budget grant for 1923-4, amounting to Rs. 38·64 crores on capital account, an additional grant of Rs. 15 crores on revenue account would have been required. But the reduction at the instance of the Inchcape Committee of the revenue (program) expenditure to Rs. 9 crores, automatically limited the capital funds to Rs. 23 crores, an amount which alone could be economically spent on open line works.

The failure to utilize the full grant in 1923-4 was explained on the ground that there was insufficient time to frame the programs and estimates. The fact that the railways could not utilise more than half the capital grant for 1923-4 gave rise to an enquiry into the causes when the Public Accounts Committee of the Central Legislature discussed the appropriation accounts for that year. In their report the committee stated :

'The large saving under the grant for the railways was undoubtedly due to the fact that the original estimates of expenditure were too high. The Financial Commissioner of Railways, whom we examined on this point, explained to us that the real reasons for the enormous lapse both under the capital grant and the grant for revenue expenditure in connexion with railway construction was due to the fact that under the old system the railway authorities were never certain of the amount of money they were going to get and consequently could never make proper arrangements for spending. They naturally made arrangements for proceeding with works that they had started or were starting during the course of the year under any contingency that might arise, so that each railway asked for the maximum amount that they could spend, and the result was that, taken all together, the estimates proved to be too high and that every year there was a considerable lapse. Mr. Sim (Financial Commissioner, Railways) explained that during the current year (1924-5) he

had cut down the total amount of the grant from Rs. 33 crores, which the railways in the aggregate hoped to spend, to Rs. 23 crores, as he expected that that was the limit of their capacity for spending. We do not desire to suggest any arbitrary limits should be fixed which would tend to curtail capital expenditure on railways, so long as expenditure is remunerative, but in view of the large lapses in capital grants in this and the preceding years, we think that consideration should be given to possible improvements in estimating.'[13]

Mr. Sim told the committee that the Agents[14] were informed that they might, if they could, spend up to their requirements on the understanding that if the total amount of expenditure was likely to be exceeded, he, as Financial Commissioner, would ask the Legislative Assembly to vote an additional grant.[15]

The experience of the two pre-separation years definitely proved that railway administrations were ill prepared either with programs or with adequate machinery to make effective use of the funds provided. The constitution of proper administrative machinery takes time, and it was only within another two or three years that the railways developed the necessary organization of technical advisers and departments to implement schemes of betterment and new construction. The Chief and the Financial Commissioners themselves stated :

'The inauguration on a large scale of a scheme for rehabilitation and improvement necessarily finds railway administrations without the detailed estimates of projects without which, and an allotment of funds, work cannot be started ; and in the absence of any certainty as to budget provision for program revenue as well as capital, the preparation of such estimates cannot profitably be undertaken, nor can satisfactory arrangements be made for any scheme, the expenditure on which will be spread over a series of years. Consequently a good deal less than half the program in the current year's budget was for sanctioned works ; for the remainder no estimates were ready. It is partly owing to this difficulty that the sums provided in the budgets of recent years, both for capital and program revenue, have always been underspent. The aim is in future to make the budget provision largely an estimate of the amount likely to be spent on sanctioned works included in the program, rather than, as at present, the budget

[13] *Public Accounts Committee Report* 1923-4, Vol. I, p. 3.

[14] General Managers of state-managed as well as company-managed railways used to be designated as Agents.

[15] *Public Accounts Committee Report* 1923-4, Vol. I, p. 62.

vision itself restricting or determining the amount for which estimates may be prepared.'[16]

This was not the only cause. The railway administrations had to revise and overhaul the whole rehabilitation program in accordance with the recommendations of the Inchcape Committee. The revision resulted in considerable alterations of the preliminary allocation of the Rs. 150 crores between the different railways. It was stated :

'On each railway system an attempt has been made to determine the total amount of additional capital that can profitably be expended, having regard to the probable increase in traffic and net earnings. Under this system proposals for additional facilities have now to be justified by reasonable expectations of increased traffic. Where existing facilities appear adequate for dealing with the traffic likely to be forthcoming during the period covered by the program, expenditure is now restricted to works required to maintain the safety of the line, to works which will have the effect of reducing working expenses, and to works for the greater convenience and comfort of passengers, particularly of the third class, on which the Assembly has decided that expenditure is desirable.

Further, the Railway Board have now adopted definite standards by which proposals for an increase in rolling-stock have to be judged and before accepting them require to be satisfied that the full amount of work is being taken from the existing stock. Similarly, definite standards of normal life have been laid down for the various classes of railway stock and equipment and proposals for renewals have now to be justified with reference to the age of the stock or equipment and to the possibility of retaining it economically in use beyond the period of its normal life. But the revision of the program in accordance with these arrangements has necessarily occupied a good deal of time, and though they should gradually speed up the work of rehabilitation and secure that money allotted will be spent both fully and economically, they have inevitably retarded progress in the year which has been devoted to their inception.'[17]

With the commencement of the period of financial autonomy for the railways in 1924-5, distinct changes appeared in the policy followed in regard to capital expenditure. Up to this date new capital was mainly intended for open line expenditure. New construction was mentioned only as of

[16] *Budget for 1924-5*, para 5, pp. 128-9.
[17] Ibid., para 4, p. 128.

secondary importance and funds were granted only for the completion of the lines already under construction. From 1924 to the commencement of the depression, construction of new lines formed an important feature of railway programs. We shall now take up, firstly, the progress of open line works and secondly, new construction.

CAPITAL EXPENDITURE AFTER SEPARATION

The capital outlay each year on open line works and new construction on State-owned railways during 1924-32 is set out in Table 4. For purposes of comparison, the figures for the pre-war year, 1913-4, and those for 1919-24 have also been included. During the eight years, 1924-32, Rs. 167·79 crores were added to the capital at charge of the State-owned railways. Out of this amount, Rs. 122·89 crores were spent on open line works and Rs. 44·90 crores on new railways. The proportion of expenditure on open lines was about 73 per cent of the total new capital spent during these years. The rate of expenditure on open lines in each year was neither steady nor well maintained. In 1924-5 itself there

TABLE 4. CAPITAL OUTLAY ON OPEN LINES AND NEW CONSTRUCTION*

(STATE-OWNED RAILWAYS)

(In crores of Rs.)

Year	Open Line works	New Construction	Total
1913-4	16·61	1·86	18·47
1919-20	13·84	0·21	14·05
1920-1	25·06	1·02	26·08
1921-2	21·22	2·11	23·33
1922-3	16·29	2·74	19·03
1923-4	17·20	2·51	19·71
1924-5	11·08	2·39	13·47
1925-6	15·24	4·01	19·25
1926-7	20·87	6·27	27·14
1927-8	22·58	9·86	32·44
1928-9	16·45	8·96	25·41
1929-30	23·67	6·51	30·18
1930-1	9·10	4·11	13·21
1931-2	3·90	2·79	6·69
Total 1924-32	122·89	44·90	167·79

* *Railway Board's Reports*, Vol. I, for each year.

was a large drop in the money spent as compared to the previous year, and the outlay amounted to only Rs. 11·08 crores. A gradual increase took place during the next three years, 1925-8, the expenditure touching Rs. 22·58 crores in 1927-8. There was in the following year a decrease to Rs. 16·45 crores and an increase in 1929-30 to Rs. 23·67 crores. The next two years reflected the effects of the crisis and the expenditure was consequently curtailed.

The total works expenditure on open lines was, in fact, more than that indicated by the figures pertaining to capital outlay. In examining the works programs, not only the capital grants, but the revenue expenditure as well, have, as stated earlier, to be kept in mind. Capital expenditure was incurred only on improvements over the existing standards. Thus, if a section of railway line was laid with 80 lb. rails and was, according to the program, to be relaid with 100 lb. rails, the procedure would be to charge to capital not the entire value of the 100 lb. rails, but only the proportionate cost of the additional 20 lb. rail, the balance of the cost of the remaining 80 lb. being met from current revenues or, what amounts to the same thing, charged off to current expenditure. With the inception of the depreciation fund in 1924,[18] the procedure has become more regular, as the cost of renewals and replacements is drawn from that fund. The program of improvements and betterments prepared involved renewals and replacements on a large scale, the cost of which was chargeable to current expenditure or the depreciation fund from that year onwards. The actual expenditure incurred in connexion with the works programs, therefore, can be

[18] Mr. (later Sir) P. R. Rau, Financial Commissioner, explained to the Public Accounts Committee in 1929 that the Railway Board was 'not so very careful about the precedence of renewals over additions before. The question was more one of funds. I understand . . . that the Railway Board every time considered whether it was more expedient to charge a particular item of rolling-stock as an addition or as a renewal. It all depends on whether they had a larger grant for the program revenue or for capital. They were anxious that the traffic should be carried and that the workshops should be kept fully occupied. That was the old arrangement, but after separation, when we got a depreciation fund which provides for all renewals, we can insist that every item of rolling-stock which has been scrapped and condemned as unfit for use should first be replaced, and it is only after every such item has been replaced that additions should be sanctioned.' *Public Accounts Committee Report* 1927-8, Vol. II—Evidence, p. 273. See also the chapter on Depreciation *infra*.

discussed only by including the cost of renewals and replacements. The total cost on this account amounted during the period of eight years, 1924-32, to Rs. 75·29 crores. The annual appropriations from the depreciation fund as compared with the capital outlay during the period are given in Table 5.

TABLE 5. WORKS EXPENDITURE DURING 1924-32[19]

(*In crores of Rs.*)

Year	Capital expenditure	Depreciation fund	Total
1924-5	11·08	7·29	18·37
1925-6	15·24	7·98	23·22
1926-7	20·87	8·05	28·92
1927-8	22·58	10·95	33·53
1928-9	16·45	9·60	26·05
1929-30	23·67	11·76	35·43
1930-1	9·10	11·40	20·50
1931-2	3·90	8·26	12·16
TOTAL	122·89	75·29	198·18

Taking the appropriations from the depreciation fund into account and excluding the cost of certain lines purchased, amounting to Rs. 15·19 crores, Rs. 183 crores in all were spent on open line works and improvements.

OPEN LINE EXPENDITURE ON STATIONARY EQUIPMENT

We may now consider the physical assets added to the Indian railways as a result of the works expenditure incurred during the post-separation years. Open line expenditure falls into two classes: that incurred on stationary equipment and that on mobile equipment. The stationary equipment consists of the road-bed, stations, signals, bridges, etc., and the mobile equipment represents the locomotives, coaching vehicles, goods wagons, etc. It should be stated that improvements in stationary and mobile equipment are very closely

[19] Compiled from *Railway Board's Reports*, Vol. I. The figures include the cost of certain railways, namely, the Delhi-Ambala-Kalka Railway in 1926-7, Rs. 4,03,51,000; the Burma and Mirpur Khas Jhudo Railways in 1928-9, Rs. 3,99,31,000 and Rs. 11,48,000 respectively; and the Southern Punjab Railway in 1929-30, Rs. 7,04,55,000. The total cost on this account amounts to Rs. 15,18,85,000, and if we deduct this figure from the total figure given in the table, we have the actual expenditure on capital account on open line works, namely, Rs. 107·70 crores. Expenditure from the depreciation fund is taken from the appropriation accounts under Demand No. 10, Railway Budget for each year.

interconnected. The introduction of heavier locomotives, larger capacity wagons and higher speeds necessitate corresponding improvements in the permanent-way and station facilities, such as the use of heavier rails, strengthening of bridges, improvement of yards, enlargement of workshops, etc. The program of open line works has, therefore, to be sufficiently comprehensive.

Taking stationary equipment first, the expenditure incurred from year to year on the different classes of works compared to the total stood as shown in Table 6. The open line expenditure on stationary equipment amounted to Rs. 4·66 crores, or 42 per cent of the total outlay in 1924-5. From this proportion there was a rapid increase to 80 per cent in 1926-7. During the succeeding three years, that is up

TABLE 6. OPEN LINE CAPITAL EXPENDITURE ON STATE-OWNED RAILWAYS*

Year	Works and stores (Rs. in crores)	Percentage of total annual outlay	Percentage relation to 1924-5
1913-4	9·30	56	200
1919-20	9·28	67	199
1920-1	14·93	60	320
1921-2	11·20	48	240
1922-3	6·77	42	145
1923-4	7·69	45	165
1924-5	4·66	42	100
1925-6	9·44	62	202
1926-7	16·74	80	359
1927-8	17·21	76	369
1928-9	12·47	76	268
1929-30	18·12	77	389
1930-1	5·29	58	113
1931-2	1·74	45	37

* Compiled from the *Railway Board's Report*, Vol. I, of each year.

to the end of 1929-30, the proportion was about 76 per cent. It came down during the next two years to 45 per cent. Apart from the relative importance of open line works as indicated by the percentages quoted, there was a substantial increase in the expenditure incurred from year to year. Taking the year 1924-5 as the base and expressing the expenditure during succeeding years as percentages of

the figure for that year, it is found that the appropriations doubled in 1925-6 and almost quadrupled during the next four years. The rapid decrease with the beginning of the depression brought the expenditure down to 37 per cent during 1931-2. In the aggregate, out of a total amount of Rs. 122·89 crores, Rs. 85·67 crores or 70 per cent were spent on open line improvements. These figures relate only to the capital funds expended, and with the addition of the contributions from the depreciation fund the total works expenditure was very much more.

The classes of works undertaken in connexion with the programs of rehabilitation and improvement were multifarious. It is impossible to deal adequately with the multitude of major and minor schemes carried out, but some idea of their magnitude and character may be gathered from a brief survey of certain representative projects. Open line projects may be classified under ten heads, namely,

(*i*) Doubling and quadrupling
(*ii*) Improvement of rails and sleepers
(*iii*) Strengthening of bridges
(*iv*) Remodelling of station yards and station facilities
(*v*) Construction of staff quarters
(*vi*) Workshops and stores and station buildings
(*vii*) Plant and machinery
(*viii*) Electrification of lines
(*ix*) Sidings, links and diversions
(*x*) Other miscellaneous works.

We may now proceed to review the works program under the more important heads.

(*i*) DOUBLING AND QUADRUPLING

It may be recalled that the most urgent problem in the early twenties was the rehabilitation and improvement of capacity. In accordance with the programs prepared, important schemes were taken up on the different railways to increase the capacity of the lines to handle additional traffic by doubling and quadrupling the track. The total

length of the additional track laid during the period 1924-32 was 227 miles on the broad gauge and 110 miles on the metre gauge.[20]

(ii) IMPROVEMENT OF RAILS AND SLEEPERS, AND STRENGTHENING OF BRIDGES

With the object of enabling the railways, more particularly the main lines, to carry additional traffic with efficiency and economy by utilizing heavier locomotives to carry increased train loads, programs of strengthening and improving track-work and bridges were co-ordinated so as to eliminate the sections of light track and weak girders on the main lines. Relaying and sleeper renewals were carried out on many sections of the railways.[21]

Closely connected with the improvements in the permanent way was the program of strengthening the bridges. In 1924-5, the rebuilding of the Bassein Bridge was provided for at a cost of Rs. 14 lakhs. Allotments were made in 1926-7 for

[20] On the State-owned railways the additional tracks compared as follows:

	31 March 1924	31 March 1932
Broad gauge ..	3,088 miles	3,365 miles
Metre gauge ..	139 ,,	249 ,,

Extensive works were undertaken on most of the railways. On the Bengal Nagpur, the Anara-Kandra, Sini-Goilkera, Mohuda-Bhojudih-Gowai, Khargpur-Cossye, Chakradharpur-Goilkera-Manharpur-Koil Block Hut, Bermo-Mohuda, Tatanagar-Khargpur, Manharpur-Kansbahal, Somharia-Sini-Kandra-Sini, Korkai Bridge-Tatanagar, and Roopnarain Bridge sections were doubled. On the Bombay Baroda & Central India, the quadrupling of the Grant Road-Borivli was taken up at a cost of about a crore of rupees. The Burma Railways doubled the Pyuntaza-Kyungon-Myohla sections. With a view to dealing with the coal traffic moving to the north, the East Indian doubled the Moghulserai-Gaya section of the Grand Chord; the other schemes were the construction of a second track on the Sone Bridge and the doubling of the line between Cawnpore and Tundla. On the Eastern Bengal, the Ishurdi-Gopalpur line was doubled and on the South Indian the Madras-Tambaram section. The Madras Suburban Improvements Project contained a number of doubling schemes. On the North-Western Railway additional tracks were constructed on the sections Deona-Chak Purana, Dina-Domeli and Mandra-Gujar Khan. The electrification program in Bombay included the provision of additional tracks, the last item being the line between Kurla and Rasli.

[21] Of the many lines on which relaying was carried out, mention may be made of the Viram section, Nagda-Muttra, Godhra-Rutlam-Nagda, Virar-Baroda, Delhi-Bandikui-Sabarmati and Rewari-Bhatinda sections on the Bombay Baroda & Central India; on the Great Indian Peninsula, similar improvements were carried out on the Khundwa-Itarsi, Jubbulpore-Allahabad, Poona-Itarsi-Sholapur, Bombay-Agra and Bhusaval-Nagpur sections. The Howrah-Khargpur and Barang-Waltair sections were relaid on the Bengal Nagpur and the Parbatipur-Siliguri on the Eastern Bengal. Other instances of relaying done during the post-separation years were the Tundla-Etawah, Dinapore Division, Coalfields Area, Jhajha-Moghulserai and the Howrah-Dehra Railway on the East Indian; between Hubli and Castle Rock on the Madras & Southern Mahratta; Delhi-Bhatinda and Delhi-Ambala-Kalka on the North-Western.

A sleeper renewal program was proposed in 1931 at a cost of about Rs. 35 lakhs on certain sections of the North-Western Railway to the extent of 7,000 miles.

the regirdering of the Allahabad, Jumna and Upper Sone Bridges on the E.I.; and the Sher and Sukkur Bridges on the G.I.P. Other bridges taken up during succeeding years were the Attock and Kotri (N.W.); Roopnarain (B.N.); Nerbudda, Sind and Chambal (G.I.P.); Ajmer, Sabarmati and Rutlam (B.B.&C.I.); Barakar and Dufferin (E.I.); Gorai (E.B.); Delhi-Jumna (N.W.); Sagaing (Burma); and minor bridges on the Sutlej.

(*iii*) REMODELLING OF STATION YARDS AND TRAFFIC FACILITIES

The station yards had to be brought into line with improvements in other directions, and large sums were allotted for the purpose. Their importance was brought home to the railway authorities during the pre-separation years. A systematic improvement of the yards secures acceleration of goods traffic and a quicker turn-round of wagons and locomotives, with the result that less money will be required for the supply of these classes of stock, and a better service may be given to the public at a lower cost. Since 1924, the remodelling and rearrangement of the marshalling yards—which were long overdue and were most urgent requirements for better service and fewer delays in transit—were undertaken. The projects started included minor alterations in the smaller stations as well as most elaborate and expensive construction on the great terminal stations. It is impossible to deal adequately with even the more important of the schemes. The list of the works costing Rs. 20 lakhs or more will be found in the appendices.[22] The character of the improvements under this head can best be indicated by referring to one or two schemes.

The remodelling of Victoria Terminus, Bombay, was one of the most expensive and elaborate schemes of the period. Traffic to and from Victoria Terminus had increased from 36,776 trains in 1911 to 54,229 trains in 1922. The trains *per diem* had increased by 48 per cent, and the tickets issued

[22] See Appendix B.

and collected by about 85 per cent. In addition to this, monthly ticket-holders alone had increased by 90 per cent. Besides this suburban traffic, there was the additional traffic from the Harbour Branch. There was in prospect a considerable augmentation of traffic as a result of the activities of the Development Board from the new industrial areas. Meanwhile the electrification of the main lines was under way, and to derive the fullest advantage the terminal facilities had to be increased to keep pace with the present and prospective demand. The scheme provided for sixteen platforms, of which four were allocated to suburban traffic, nine to long distance, express and passenger traffic, and three to combined parcels trains. The original proposals also contemplated facilities for the Bombay, Baroda & Central India Railway as well, but this part of the scheme was rejected. The improvements provided for sidings, arrangements for overflow stock, sidings for repair, washing, etc.[23] Apart from these traffic facilities, the terminal as reconstructed was considered to rival those ranked among the best in the world.

A project different in character but almost equal in magnitude was that of the Cawnpore remodelling. In 1926 the Cawnpore Area consisted of a number of independent yards of several railways, namely, the E.I., G.I.P., B.B.&C.I. and B.&N.W., which worked into that area. The traffic facilities provided involved much overlapping, duplication, and delays, with unnecessary inconvenience to the public. It was proved on investigation that the cost of working could be very much reduced and services considerably improved by the construction of a central sorting and marshalling yard, with transhipping and repacking sheds and a central passenger station where all passengers entering and leaving Cawnpore could be dealt with, and where an improved central parcels service could be inaugurated with the aid of motor transport.

[23] *Proceedings of the Standing Finance Committee for Railways*, Vol. II, No. 3, pp. 1-4.

A total annual saving of Rs. 8 lakhs was anticipated from the reorganized system.[24]

(*iv*) WORKSHOPS, STORES AND STATION BUILDINGS

The increase in the number of rolling-stock required to handle the additional traffic had outgrown the capacity of the workshops. The position as to the inadequacy of the workshop facilities was shown by the high percentage of rolling-stock under, or awaiting, repairs. Approximately one-fifth of the stock was crippled because repairs were overdue on most of the railways. Every reduction in the stock remaining idle for this reason would imply a further step taken towards a better and more intensive utilization of vehicular equipment. The adoption of progressive workshop practice and improved machinery could enable work to be speeded up, and costs to be reduced. When the time during which rolling-stock is under repair is reduced, the cost of repair itself is lowered and the arrears can be overtaken. The program of modernizing workshops was thus an important part of the open line works program. In 1925-6 the railway workshops at Charbagh (Oudh & Rohilkund, now E.I.), Trichinopoly (S.I.), Dohad (B.B.&C.I.), and Perambur (M.&S.M.) were taken in hand for remodelling. In the following year the reorganization of the E.B. workshop at Kanchrapara and the G.I.P. shops at Jhansi was started. That year, 1926-7, also witnessed the appointment of a committee presided over by Sir Vincent Raven of the London & North-Eastern Railway to enquire into the possibilities of the reorganization of the workshops of state-managed railways and their improvement on co-ordinated lines. The results of the investigation were reported to have proved the necessity, at any rate for some years to follow, for heavy expenditure on workshops in general. In 1928-9 the Jamalpur workshop was also included in the schemes and in 1934-5 the Khargpur power house.

[24] *Proceedings of the Standing Finance Committee for Railways*, Vol. III, No. 2, pp. 12-13.

Among the notable instances of station building at terminals or junction stations may be mentioned Victoria Terminus, already referred to, the Central Station at Churchgate at Bombay, the reconstruction of other stations such as Cawnpore, Lucknow, Trichinopoly and Erode.

(*v*) ELECTRIFICATION OF SUBURBAN SERVICES

There was, during the early post-war years, an attempt to consider the possibilities of electrification of suburban services. The first scheme to be started was at Bombay and on 3 February 1925, the Governor of Bombay declared open the first electric railway in India, namely, the Harbour Branch section of the G.I.P., from Victoria Terminus to Kurla. The event marked the beginning of a new era for rail transport in this country. The G.I.P. Railway Project was only part of the three big schemes proposed for the electrification of the suburban services in Bombay, Calcutta and Madras. The Bombay scheme was sanctioned first and was taken up by both the railways radiating from that city, namely, the G.I.P. and the B.B.&C.I. The main and suburban lines of the G.I.P. were first electrified up to Kalyan, and on the B.B.&C.I. from Churchgate to Borivli. The G.I.P. electrification was by stages completed by 1929, and on 31 March 1930, the track electrified amounted to 173·5 miles. The main line electrification was done up to Poona by the end of 1929 and up to Igatpuri early in 1930. The difference that electrification made in the transportation service will be clear from one instance. Each rake of the electric train was designed to accommodate 1,000 passengers, or a third more than was possible in the steam-hauled rake. On the B.B.&C.I. the suburban lines up to Borivli and the main line from Grant Road to Bandra were also completed. Later, electrification was extended up to Virar.

The scheme pertaining to Calcutta did not materialize but early in 1928 proposals for the electrification of the suburban services of Madras took shape. The cost was estimated at

Rs. 42·77 lakhs. The idea of a separate power house, as on the G.I.P. Railway, was given up in favour of an arrangement with the Madras Electric Supply Corporation. The savings attributable to electric, in substitution of steam, traction were anticipated to amount to one lakh of rupees per annum. The scheme was completed in 1932.[25]

There can be hardly any doubt as to the advantages derived from electrification: elimination of steam and smoke, greater acceleration, increased power on gradients, automatic signalling permitting a closer headway than with steam trains, rapid reversal of suburban trains, etc. It was claimed that on financial grounds alone the advantages were considerable and it was quoted that any one could travel from Kurla to Victoria Terminus and back on a season-ticket at the rate of 11 miles for one anna, an example of cheap travel unequalled in the world. The progress of electrification by the end of 1936-7 may be indicated by a few figures. There were on 31 March 1937, 73 electric locomotives having a total tractive power of 2·16 million pounds, and 117 units of electric motor coach composites with a total seating capacity of 10,219. They accounted for over two million train miles on the three railways.

(*vi*) OTHER WORKS

There were also other works of a minor character undertaken. Amongst these were the works intended to improve the conditions of the employees, such as the construction of staff quarters and welfare schemes. According to the estimated allotments for each year, the railways provided during the first six years after separation Rs. 6½ crores and during the succeeding seven years Rs. 2½ crores on staff quarters. On welfare works the railways appear to have spent during the second period over a crore of rupees.

[25] *Proceedings of the Standing Finance Committee for Railways*, Vol. IV, No. 7, pp. 29-30.

An entirely different object of expenditure is provided by the railway collieries, which represent a total investment of more than Rs. 4 crores. The projects so far referred to have been the major schemes undertaken during the period. Besides these were hundreds of smaller items of works undertaken by every railway. Large sums of money were spent by each administration for carrying out improvements in existing carriages, raised platforms, booking facilities, refreshment stalls, covered platforms, lower class waiting rooms, water supply arrangements for passengers, sanitary arrangements, etc. When even in a year of such an attenuated program of works as 1936-7, the expenditure proposed amounted to Rs. 28 lakhs, the normal expenditure during prosperous years may well be imagined.

The capital outlay on open line works on the principal State-owned railways during 1924-32 may be seen from Table 7. The relative importance of the different classes of works may be judged only from the budget allotments in the absence of figures of actual expenditure. The final costs of some of the important works started during the pre-depression

TABLE 7. CAPITAL OUTLAY ON OPEN LINE WORKS FOR THE YEARS 1924-5 TO 1931-2*

(*In crores of rupees*)

Year	E.B.	E.I.	G.I.P.	N.W.	B.N.	B.B.C.I.	M.S.M.	S.I.	Others	Total
1924-5	0·19	2·13	0·84	0·48	2·32	1·87	0·64	0·47	2·14	11·08
1925-6	1·09	3·24	2·19	1·85	1·51	1·77	1·26	1·38	0·95	15·24
1926-7	0·58	2·69	2·92	8·46	0·84	1·72	1·14	1·17	1·35	20·87
1927-8	1·42	3·79	4·08	4·64	0·99	2·63	1·77	1·43	1·83	22·58
1928-9	1·17	3·43	3·94	2·44	0·60	1·05	1·07	1·30	1·45	16·45
1929-30	1·53	2·32	3·54	8·92	1·63	1·44	1·52	1·10	1·67	23·67
1930-1	0·72	1·14	1·54	0·73	0·45	1·37	0·81	1·23	1·11	9·10
1931-2	0·16	0·36	0·56	0·23	0·36	0·41	0·68	0·57	0·57	3·90
TOTAL	6·86	19·10	19·61	27·75	8·70	12·26	8·89	8·65	11·07	122·89
1932-3	0·10	0·25	—0·72	—0·68	0·14	0·14	0·06	0·19	0·02	—0·50
1933-4	—0·42	—0·67	—1·19	—0·20	0·09	—0·03	0·03	0·08	0·04	—2·27
1934-5	0·10	0·66	—0·42	—1·03	0·30	0·23	0·14	0·31	—0·22	0·07
1935-6	0·24	1·22	—0·53	0·49	0·30	0·15	0·21	0·15	0·06	2·29
1936-7	—0·12	0·44	—0·37	—0·16	0·08	0·04	0·04	0·20	0·13	0·28
TOTAL	—0·10	1·90	—3·23	—1·58	0·91	0·53	0·48	0·93	0·03	—0·13

* Compiled from *Railway Board's Report*, Vol. I, for each year.

period and completed in the last decade are given in the appendix.[26]

MOBILE EQUIPMENT

The mobile equipment of railways, usually referred to as rolling-stock, consists of locomotives, coaching vehicles, goods wagons and other vehicles, all intended for moving traffic. With the increase of open line facilities it was possible to make use of heavier locomotives, larger capacity wagons and other vehicles. The additional capital invested in the purchase and renewal of rolling-stock amounted during 1924-32 to Rs. 37·22 crores. This amount has to be considered along with the expenditure already incurred during the five years 1919-20 to 1923-4, namely, Rs. 43·76 crores on capital account.

The progress of expenditure on rolling-stock during this period, the proportion to the total annual capital outlay on open lines and the percentage variations are stated in Table 8. The proportion of expenditure on rolling-stock was 58 per cent of the outlay on open line works in 1924-5. In two years it came down to 20 per cent. During the

TABLE 8. PROGRESS OF CAPITAL EXPENDITURE ON ROLLING-STOCK

Year	Expenditure on rolling-stock (Rs. in crores)	Percentage of total open line capital	Percentage relation to 1924-5
1913-4	7·31	44	114
1919-20	4·56	33	71
1920-1	10·15	40	158
1921-2	10·02	47	156
1922-3	9·52	58	148
1923-4	9·51	55	148
1924-5	6·42	58	100
1925-6	5·80	38	90
1926-7	4·13	20	64
1927-8	5·37	24	84
1928-9	3·98	24	62
1929-30	5·55	23	86
1930-1	3·81	42	59
1931-2	2·16	55	34

[26] See Appendix C.

next three years, 1927-30, capital expenditure on rolling-stock amounted to only 24 per cent of the total annual appropriations. The sudden decrease in expenditure in 1931 and 1932 on works raised the proportion of the capital outlay on rolling-stock to a higher percentage, namely, 42 and 55 per cent respectively. On the whole there seems to have been a certain steadiness about the rolling-stock expenditure. If we take the amount spent in 1924-5 as the base, the expenditure during the succeeding seven years indicates a general decrease. The capital spent during the earlier period, 1919-24, was much larger, due to the effects of the post-war rehabilitation program.

It would be interesting to consider the physical assets which have been added to the railway systems as a result of the additional investment on rolling-stock. It is possible to attempt here a more definite estimate of the increased assets than could be done in regard to the other classes of open line works. The statistics of rolling-stock on Class I railways as on 31 March 1924 and 1932 are given in Table 9.

There was a substantial increase in locomotive power. Although the number of locomotives on the broad gauge recorded a decrease in 1932, tractive effort went up by 9 million lbs. On the metre gauge railways there was an increase in the number of both locomotives and tractive power, to the extent respectively of 56 locomotives and 7·6 million lbs. of tractive effort. Expressed in percentages, the increase in locomotive power was 7 per cent on the broad gauge and 23 per cent on the metre gauge. This implies that railways took advantage of the program of renewals and replacements to secure the substitution of better types of locomotives.

The next class of assets consists of passenger carriages or the coaching stock. The position with regard to this is important for two reasons: firstly, passenger traffic accounts for a considerable portion of railway earnings, and secondly, there were serious complaints as regards overcrowding and inadequacy of accommodation in the lower classes. On the broad gauge there was a reduction in the number of units, but this was

TABLE 9. ROLLING-STOCK ON INDIAN RAILWAYS

(CLASS I RAILWAYS)

	Broad Gauge				Metre Gauge			
	31 March				31 March			
	1924	1932	+ or —	%	1924	1932	+ or —	%
Steam locomotives :								
Number	6,564	5,860	−704	89	2,715	2,771	56	102
Tractive effort (lbs. in millions)	136·6	145·6	9·0	107	32·8	40·4	7·6	123
Electric locomotives :								
Number	..	69	69	..	..	6	6	..
Coaching vehicles :								
Number (in units)	10,091	10,003	88	99	7,577	7,981	404	105
Seats by classes :								
First	21,802	25,398	3,596	116	10,089	11,004	915	109
Second	40,724	44,964	4,240	110	13,261	14,885	1,624	112
Inter	48,837	67,080	18,243	137	9,547	12,800	3,253	134
Third	567,328	689,265	121,937	121	321,242	379,814	58,572	118
Other vehicles	3,527	3,817	290	108	1,376	1,436	60	104
Goodswagons :								
(in thousands)								
Covered wagons :								
Number	95·4	94·3	—1·1	99	37·6	48·0	10·4	128
Capacity (in tons)	1,900·3	1,909·0	8·7	100	432·6	609·2	176·6	141
Open wagons :								
High-sided :								
Number	37·4	37·3	— 0·1	100	2·4	3·0	0·6	125
Capacity (in tons)	751·9	790·7	38·8	105	29·3	46·3	17·0	158
Low-sided :								
Number	8·0	6·0	—2·0	75	4·9	5.4	0·5	110
Capacity (in tons)	136·0	119·9	—16·1	88	50·6	69.2	18·6	137
Special wagons :								
Number	10·3	12·8	2·5	124	6·2	6.5	0·3	103
Steam coaches :								
Number	..	13	13	..	..	7	7	..
Seats	..	1,113	1,113	..	..	623	623	..
Electric motor coaches :								
Number	..	93	93	..	..	17	17	..
Seats	..	9,248	9,248	..	..	720	720	..
Service vehicles :								
Number	3,545	4,270	725	120	2,432	3,866	1,434	158
Road motors :								
Number	..	81	81	..	..	7	7	..
Rail motors :								
Number	43	2	— 41	..	9	4	— 5	44

more than offset by the increase in seating capacity. As passenger traffic is handled in four different classes of service, namely, first, second, inter and third, the additional seating capacity has to be examined in the light of the effects on the accommodation provided under each of these divisions. On the broad gauge, the additional seats provided, as compared to the number in 1924, amounted to 3,596, 4,240, 18,243 and 121,937 ; or increases of 16 per cent, 10 per cent, 37 per cent, and 21 per cent respectively for first, second, inter and third classes. On the metre gauge there is to be seen the same trend. Besides an increase in the number of units to the

extent of 5 per cent, seats provided during the period advanced by 915, 1,624, 3,253, and 58,572, or increases of 9 per cent, 12 per cent, 34 per cent, and 18 per cent respectively in first, second, inter and third classes.

The number of goods wagons on the broad gauge showed a decrease, but capacity in tons was maintained in all classes of stock, excepting low-sided wagons in which there was a decrease both in number and capacity. On the metre gauge, there was a general advance all round, but improvement in capacity was greater than in number. The position with regard to other classes of stock will be found from the statistics included in Table 9.

Mention must also be made of the new classes of rolling-stock which followed the introduction of electrification, such as electric locomotives, electric motor coaches, etc. A certain amount of additional stock represents the demands of the new lines constructed during the period. But even allowing for the requirements of new lines, the present equipment represents a much larger capacity than is indicated by the figures, owing to the higher standard of operating efficiency attained and the effects of various changes in organization and operation such as pooling of wagons, improved marshalling yards, terminal facilities, stronger bridges and track, enabling higher speeds and larger tonnage to be reached, the introduction of more efficient train control, etc.

NEW CONSTRUCTION

We may now proceed to consider the capital expenditure incurred during the post-separation period on the construction of new lines. Before 1924-5, new construction was less important and urgent than the improvement of open line facilities, and funds, as was stated earlier, were provided only for the completion of the lines under construction. An important change came about with effect from 1924 in the policy of the Railway Board as regards capital expenditure.

The cost of new construction during the post-separation years is given in Table 10, showing the capital outlay for each

year. For purposes of comparison, the figures for the pre-war year, 1913-4, and those for 1921-4, have also been included.

TABLE 10. CAPITAL OUTLAY ON NEW CONSTRUCTION*

Year	Capital outlay on New Lines (Rs. in crores)	Percentage to total outlay during the year
1913-4	1·86	10·1
1921-2	2·11	9·0
1922-3	2·74	14·4
1923-4	2·51	12·7
1924-5	2·39	17·7
1925-6	4·01	20·8
1926-7	6·27	23·2
1927-8	9·86	30·4
1928-9	8·96	35·2
1929-30	6·51	21·5
1930-1	4·11	31·1
1931-2	2·79	41·7
1932-3	0·57	†
1933-4	0·22	‡
1934-5	0·18	70·2
1935-6	0·29	11·2
1936-7	..	..

* *Railway Board's Reports*, Vol. I, for the respective financial years.

† Owing to credits under open line works, the grand total figures for the year, including the cost of new construction was only Rs. 7 lakhs.

‡ The grand total for the year was a *minus* figure of Rs. 2·05 crores for the reason stated above.

Note the trend of expenditure on new lines. The funds devoted to construction increased sharply during 1925-6 to 1929-30, the year in which the cost of capital proved to be too high to make investment in railway construction remunerative. The total amount of expenditure incurred on new railways from 1924 to 1932 amounted to Rs. 44·90 crores. The physical assets measured in terms of route milage added during these years are given in Table 11, which shows the progress of the milage opened for public traffic. In judging the character of the activity in construction, account must also be taken of the new lines under active construction during the period, which were distributed as indicated in the same table.

The rapid increase in construction-activity since 1924-5 is remarkable. That activity was well maintained for a period of five years, 1924-9, over all gauges. After 1929 is recorded

TABLE 11. NEW LINES OPENED TO PUBLIC TRAFFIC AND LINES UNDER ACTIVE CONSTRUCTION*

Year	Milage open to public traffic				Milage under active construction			
	Broad	Metre	Narrow	Total	Broad	Metre	Narrow	Total
1923-4	253·34	155·11	21·67	430·12	426·00	308·24	24·78	759·02
1924-5	81·91	149·90	1·67	233·48	658·56	488·69	53·51	1,200·76
1925-6	144·38	145·09	51·29	340·76	1,016·13	1,115·24	315·23	2,446·60
1926-7	280·92	128·25	11·60	420·77	930·26	1,260·97	360·21	2,551·44
1927-8	224·55	333·20	141·39	699·14	1,429·81	1,820·61	378·34	3,628·76
1928-9	476·22	597·93	208·00	1,282·15	1,375·66	1,288·74	231·77	2,896·17
1929-30	326·50	412·08	73·49	812·07	730·77	457·51	69·29	1,257·57
1930-1	306·13	266·96	..	573·09	488·06	201·43	120·36	809·85
1931-2	308·06	121·50	140·54	570·10	175·82	141·99	..	317·81
1932-3	177·79	128·13	..	305·92	9·34	27 21	..	36·55
1933-4	2·65	9·33	..	11·98	..	50·37	..	50·37
1934-5	0·30	70·79	..	71·09	..	138·64	..	138·64
1935-6	1·54	109·27	..	110·81	..	63·44	..	63·44
1936-7	..	12·50	..	12·50	..	62·98	..	62·98

* *Railway Board's Report*, Vol. I, for each year.

a drop on all railways both in total milage opened and under construction. These features of new construction are to be interpreted in the light of certain considerations. In 1923-4, the Railway Board investigated the prospects of a large number of projected railways. In 1924-5, it was 'decided to push forward the construction of all schemes likely to prove remunerative.'[27] The report for the succeeding year stated the policy and attitude of the Railway Board even more clearly, in the following words :

'The improved financial position of railways resulting from the separation of finance has enabled the Railway Board to adopt a bolder policy in the direction of new construction. The problem has been dealt with on the basis of examining the whole country in separate areas roughly corresponding to the areas served by different railway administrations, and continuous programs of survey and construction are being prepared which are subject to revision each year in the light of the co-ordinated recommendations of the local governments and the local railway administrations. In order to deal more expeditiously with the increased program of construction, the organization on those railways with heavy programs has been improved with the appointment of special chief engineers with additional construction staff. The total milage of projects which the Railway Board have either sanctioned or were having investigated by the end of March 1926 amounted to between 6,000 and 7,000 miles, and *it is hoped that when all arrangements in this direction are in full swing, the total yearly*

[27] *Railway Board's Report* 1924-5, Vol. I, p. 35.

addition to the milage of Indian Railways will be in the neighbourhood of 1,000 miles.'[28] (*Author's italics.*)

In the following year, 1926-7, the Railway Board, observing how their efforts materialized into the production of a five-year program of construction by each of the larger railways subject to annual revision, stated with confidence that

'Since the sum of the total additional open line milage shown (in the programs) amounts to over 7,000 miles at the end of the quinquennium, there appears to be no reason why the anticipations in last year's report in regard to an annual addition of 1,000 miles to the open milage of Indian Railways should not be realized.'[29]

These extracts from the annual reports of the Railway Board convey some idea of the policy and psychology behind the program of new construction during the period. The Railway Board adopted certain principles in connexion with the preparation of the programs for the construction of new railways. The report for 1926-7 described how the Railway Board laid down certain standards of construction and how 'with the standards now laid down it would be possible to choose one which will suit the traffic expected and give a fair return in almost every case unless the nature of the country is such as to preclude the construction of cheap railways or there are special reasons which make it impossible for any railway to compete successfully with road traffic.'[30]

The progress of new construction during the period is indicated by the figures in the last table. In examining the projects sanctioned and works started, the statistics of the lines under active construction in the earlier years show the extent of milage taken in hand. In 1923-4, the last pre-separation year, the lines under active construction amounted to 760 miles. In 1924-5, they increased to 1,201 miles. During the next two years, the milage under construction more than doubled, the total length amounting respectively to 2,447 and 2,551 miles. The highest figure was touched in 1927-8

[28] *Railway Board's Report* 1925-6, Vol. I, p. 28.
[29] *Railway Board's Report* 1926-7, Vol. I, p. 34.
[30] Ibid.

when the total milage under construction rose to 3,629 miles. The next year witnessed a slight reduction to 2,896 miles and thereafter the decline was rapid. In 1929-30 construction slowed down considerably to less than half the milage of the previous year, namely, to 1,258 miles, and in the next two years it came down to less than 40 miles. The new railway lines were chiefly additions to the broad and metre gauges and were approximately of equal milage.

Turning now to the lines opened to public traffic, we find that during the first two years, 1924-6, the railways concerned were chiefly those started before 1924. The construction and completion of a new railway naturally takes time, and the effect of the new policy began to make itself felt only in the year 1927-8, when the milage opened increased from 233 miles to 700 miles. In the following year it increased to 1,282 miles. Thus the ambition of the Railway Board to attain an annual addition of 1,000 miles to the open milage materialized only three years after the introduction of the policy directed to secure it. But in the very next year, the pace could not be maintained and the new lines opened amounted to 812 miles only. During the succeeding two years, the additions came down to the neighbourhood of 570 miles and in 1932-3 to 306 miles. The lowest point was touched in 1933-4 when the additions were only 12 miles. The total milage opened to public traffic during the period 1924-32 was 5,360 miles, of which 2,400 miles belonged to the broad gauge and 2,300 miles to the metre gauge.

It is interesting to examine the extent of increased milage brought about by the new construction programs on the individual railway systems. In Table 12, the route milage of each railway on 31 March 1924 and 1932, the net additions and the percentage increases have been given. It may be seen from the figures that the increase in route milage is more evenly distributed among the state-managed railways than among the company-managed railways. The length of two out of the five state-managed lines increased by more than 20 per cent.

The East Indian and the Great Indian Peninsula stood lowest, with an addition of only 10 per cent in their milages. The North-Western Railway had the largest increase, and with the acquisition of the Southern Punjab Railway,[31] it had an increase of 22 per cent. The Burma increased in size by 21 per cent and the Eastern Bengal by 13 per cent.

TABLE 12. PROGRESS OF ROUTE MILAGE ON STATE-OWNED RAILWAYS*

Railways	Route milage on 31 March 1924				Route milage on 31 March 1932					
	Single track	Double track	Treble track	Total	Single track	% Inc.	Double track	Treble track	Total	% Inc.
A.B.	1,049	..	..	1,049	1,306	24	..	..	1,306	24
B.&N.W.†	2,052	10	..	2,062	2,102	2	10	..	2,112	2
B.N.	2,779	161	..	2,939	3,166	14	251	..	3,417	16
B.B.&C.I.	3,523	258	4	3,785	3,682	4	242	19	3,944	4
M.&S.M.	2,997	44	..	3,041	3,178	6	48	4	3,230	6
S.I.	1,876	...	..	1,876	2,474	32	5	16	2,495	33
Burma‡	1,577	119	..	1,695	1,850	17	207	..	2,057	21
E.B.	1,565	139	24	1,728	1,772	13	153	23	1,947	13
E.I.§	3,132	759	54	3,945	3,400	9	886	61	4,348	10
G.I.P.	2,586	774	30	3,389	2,919	13	773	33	3,725	10
N.W.‖	4,965	863	..	5,828	6,211	25	882	..	7,092	22
Jodhpur	858	..	..	858	977	14	..	..	977	14
N.S.¶	944	18	..	962	1,220	29	18	..	1,238	29
R.&K.†	571	..	..	571	570	..	1	..	571	..

* *Railway Board's Report*, Vol. II.
† Company railways included for purposes of comparison.
‡ Became state-managed in 1929.
§ Figures for 1925-26 includes the O.&R.Ry. which was merged in the system in 1925.
‖ Includes the Southern Punjab Railway taken over by the State in 1930.
¶ Indian *State* line included for comparison.

As regards company-managed railways, the South Indian extended its system by about a third and the Assam Bengal by about a quarter. The Bengal Nagpur added to its length a sixth of its total milage in 1924. The Bengal & North-Western, the Bombay Baroda & Central India and the Madras & Southern Mahratta showed comparatively small increases, namely, 2-4 per cent on the first two and 6 per cent on the last. It is interesting to observe that these three railways have been precisely those lines which have been financially successful, and maintained surpluses even during the lean years of the depression. The explanation

[31] The Southern Punjab Railway, extending from Delhi to Samasata, from Ludhiana to McLeodganj, from Jullundur to Firozepur and from Kasur to Lodhran, with a total milage of 927, was the property of the Southern Punjab Railway Company and worked by the North-Western. On 1 January 1930, it was purchased by the State at a cost of Rs. 7 crores approximately and made an integral part of the North-Western Railway System.

may in part be that the uneven distribution of newly constructed lines among the different railways represents an attempt to extend railway facilities to regions inadequately served before. But even granting this, one cannot help venturing the observation that the management of the paying lines might probably have had doubts about the financial return from new construction.

These were the principal features of the program of new construction started since the separation. The projects included in the program of each railway up to the year 1931 and to the end of the financial year 1936-7 are given in the appendix.

The policy of capital expenditure started during the post-war decade and crystallized during the post-separation years was subjected to a great deal of criticism. The Railway Retrenchment Sub-committee, who investigated the entire financial position of the Indian railways in 1931, entertained grave doubts as to the soundness of the new construction program. They said :

> 'In quite a number of cases the original estimate of expenditure has been considerably exceeded, while, on the other hand, and partly for this reason, the net return has been much less than anticipated. In some cases, it seems, at present, impossible to expect that the return originally anticipated will be obtained in any reasonable length of time. This is, no doubt, partly due to the world-wide economic depression, but from the statement one gains the impression that the railways in the first flush of having unlimited funds at their disposal, commenced new constructions on too optimistic estimates. As regards estimates there are over a dozen instances when estimates have been exceeded by over 20 per cent.'[32]

Let us now consider how far the charge of starting projects on too optimistic estimates is justified. For convenience of discussion, attention may first be given to new construction.

FINANCIAL JUSTIFICATION OF NEW PROJECTS

The principal question raised with regard to the new construction programs concerned their financial justification. The

[32] *Report of the Railway Retrenchment Sub-Committee*, October 1931, para 118, p. 42.

usual procedure in regard to new projects is to prepare estimates of the costs of construction and forecasts of revenue expenditure, traffic and revenue earnings, from which data it will be decided whether the lines will pay or not. If it is found that they would, funds are provided and construction started. The instances of construction during the pre-separation period indicate a disappointing record for many lines. The earnings of the new railways had fallen far short of the estimated financial return on capital.[33] These instances suggest the necessity for a careful examination of the record of new construction since 1924. In an attempt to appraise the earning capacity of new lines opened for traffic, there are unfortunately very little data to proceed upon. When once the lines had been opened for traffic, they were merged with the main lines and the earnings were not accounted for separately. It thus becomes impossible to ascertain if the estimates were correct and if the expected earnings were realized. Recently, however, attempts have been made to keep separate records of the performance of new lines, but this does not help one in appraising the financial position of the lines opened during the first six years after separation.

There is also another difficulty in the case of recent construction. Usually the railways calculate upon the probability that a new line will attain maturity in five years, that is to say, will become remunerative on the basis of the traffic expected five years after the line has been opened. No line sanctioned

[33] Cf. : 'Railway estimates appear to have a habit of falsifying themselves to an inconvenient extent. For instance, according to the *History of Indian Railways* and the statements referred to in the replies given in the Assembly to unstarred questions No. 231 of 31 January 1922, No. 247 of 6 February 1922, and No. 4 of 6 September 1922, the Katwa-Barharwa Railway was expected to earn nearly 6 per cent, but never earned more than 3¾ per cent; the Dasghara-Jamalpurganj promised a return of 5·33 per cent, but never gave more than 2·91 per cent; the Ahmadpur-Katwa was estimated to yield 4·60 per cent, but the actual yield never rose above 2·36 per cent; the Bankura-Damodar River was expected to give 5 per cent, but never gave more than 2·32 per cent; the Burdwan-Katwa was calculated to produce 4·84 per cent, but the actuals show an average return of only 1·84 per cent; the Trans-Indus promised the bounteous return of 7½ per cent but in actual performance yielded 0·68 per cent in 1913-4, 0·20 per cent in 1916-7, and regular deficits in other years, until in 1920-1 the deficits amounted to over Rs. 18¾ lakhs; the Arakan with no traceable promise of return is loaded with guarantees aggregating to 5½ per cent, but in actual working it has always shown deficits which now amount to over Rs. 50,000 a year; while in respect of many other new railways no record at all is kept of the actual returns obtained and this makes it impossible to ascertain how the actuals compare with the estimates.' *Railway Problems*, published by the Servants of India Society, Poona, 1924, pp. 83-4.

after 1924-5 had completed this period of five years before the commencement of the depression and the great bulk of the lines were open for a much shorter period. Meanwhile the depression set in and upset all calculations based on the assumed continuance of normal conditions.

But one test may be applied to check the estimated remunerative prospects of the new lines completed. The anticipated earnings of a projected line may be justified by the estimated traffic prospects only when the actual costs of construction do not exceed materially the estimated capital expenditure. If the estimated capital cost of a new railway is Rs. 40 lakhs and the estimated percentage return on the capital outlay is 6 per cent, the actual percentage return will be halved if the cost goes up to Rs. 80 lakhs. The examination of our railway accounts by the Public Accounts Committee and the Railway Retrenchment Sub-Committee and their scrutiny of the policy of capital expenditure during the eight years after the Separation Convention, brought to light several instances of such excesses over the estimates. In Table 13 is given a list of certain new railways completed during the period under review on which the actual expenditure exceeded the estimated costs by more than 15 per cent.

It will be observed from the table that ten of the projects exceeded their original estimated costs by more than a third. On one of the railways included in this group, namely, the Kangra Valley Railway, the capital cost was more than twice the estimated cost : as against an estimate of Rs. 134 lakhs, an expenditure of Rs. 296 lakhs was actually incurred, representing an increase of 121 per cent over the original anticipation. For another project, the Calcutta Chord Railway, the actual expenditure was Rs. 320 lakhs as against an estimate of Rs. 179·90 lakhs. Similarly the Pegu-Kayan was sanctioned on an estimate of Rs. 34·52 lakhs and on completion the expenditure rose to Rs. 54·29 lakhs, an increase of 57 per cent. It is obvious that the financial return based on the lower figures can never be realized when the actual expenditure is increased

TABLE 13. MORE IMPORTANT NEW CONSTRUCTION PROJECTS SHOWING EXCESSES OVER ESTIMATES*

(*Rs. in lakhs*)

Name of project	Date of sanction	Date of opening	Estimate Rs.	Actual exp're	Return expected	Actual Return	%†
			Rs.	Rs.	%	%	
Moulmein-Ye	1922	16-4-25	75·87	92·68	..	1·8	122
Pegu-Kayan	16-1-24	15-1-27	34·52	54·29	..	4·6	157
Sibsagar Rd.-Khawang	5-2-24	10-11-27	26·92	31·96	5·9	2·6	119
Furkating-Baduli-Jorhat	14-4-25	1-8-28	27·37	31·61	7·0	0·6	115
Dindigul-Pollachi	28-4-25	19-11-28	71·71	87·82	6·3	9·0	122
Calcutta Chord	23-7-25	31-1-31	179·90	319·97	..	..	178
Tumsar Road-Tirodi	11-7-25	15-2-30	30·77	45·02	10·0	..	146
Gudivada-Bhimavaram	17-12-25	17-9-28	28·61	40·81	..	3·6	143
Nidadavolu-Narsapur	,,	,, & 3-2-29	54·44	69·73	6·6	3·1	128
Madura-Bodinayakanur	28-12-25	20-11-28	44·17	55·30	8·7	5·5	125
Kangra Valley	1-2-26	1-4-29	134·00	295·65	2·8	—0·9	221
Kyan Thongwa	26-1-26	15-12-28	11·11	14·31	10·8	..	129
Dhamuah-Laxmi-kantapur	12-1-27	15-12-28	37·38	40·34	7·0	—1·9	142
Kushab-Chak Jumra	21-2/4-27	21-1-28	121·05	149·50	6·0	..	124
Purnea-Murliganj	16-8-27	1-10-29	25.69	30·96	6·6	4·5	121
Qilla Saifulla-Fort Sandeman Extension	16-8-27	15-7-29	46·23	56·50	..	—7·9	122
Abdulpur-Nawabganj	12-10-27	11-2-30	63·93	84·39	6·2	..	132
Salem-Mecheri	10-3-28	15-4-29	10·63	13·54	..	2·7	127
Kalukhali-Bhatiapara	10-1-28	1-12-31	41·40	57·02	5·0	..	138
Pollachi-Palghat	13-6-28	1931-2	39·37	51·79	5·2	..	132

* Source : *Report of the Railway Retrenchment Sub-Committee*, October 1931.
† Percentage relation of the actual expenditure to the estimates.

by 50 or 100 per cent.[34] If this is the record of the capital costs for these lines, in view of the comparative rigidity of economic organization in the territory served by them and the inherent resistance of the population to sudden changes, the performance even after five additional years cannot come up to the standard of the estimated rate of return. It is thus impossible to say what the actual position has been with regard to the lines completed since 1924 without a detailed enquiry into the financial history of the new railways.

The principal factor which was responsible for financial miscalculations in carrying out the programs of new construction was the plethora of funds sanctioned and the assurance that no difficulty need be apprehended as to the availability of sufficient money to meet the costs of extensions and improvements. We have already seen how during the two pre-

[34] Further details of the less flagrant instances will be found in Appendix D.

separation years, 1922-4, the railways failed to spend a large portion of their allotments and how by the time separation was introduced it was gradually realized that even the program revenue expenditure of Rs. 150 crores would have to be left largely unutilized. The principle which dominated the situation was not so much the grant of funds to meet a definite expenditure : it was, in fact, one of the grant of as much funds as could be spent by the railway administrations. It is, therefore, not surprising that under such circumstances the spending departments put forward diverse schemes towards betterment and new construction. The problem of differentiating between the essential and the non-essential, the urgent and the developmental, or the immediate or future improvement, arises only when the funds available are strictly limited and have to be apportioned amongst those schemes which promise the maximum utility and return. If they are not limited, it is inevitable that doubtful as well as sound projects should find a place in the programs of railways.

The effect of this factor is to be traced in the budget estimates. The appropriation accounts of the separation year itself reflected these tendencies. The Public Accounts Committee of the Central Legislature discussing the accounts of 1924-5 stated :

> 'There seems to be an incurable and on the whole laudable habit among officers charged with the duty of spending money on carrying out public works of being over-sanguine as to their capacity to spend during a given period.'[35]

The budgeting of capital grants for three successive years had already proved meaningless as the actual expenditure fell far short of the budget grants. The Railway Board realized that the Agents of railways had asked for much larger funds than they could hope to use. Consequently, it was found that there were in the railway accounts

> 'evidences of a tendency to over-estimate expenditure in the preparation of demands for grants, which are afforded by numerous instances brought

[35] *Public Accounts Committee Report* 1924-25, Vol. I, p. 10.

to notice....This tendency to over-estimate is particularly noticeable (*a*) in the provision made for establishments, and (*b*) in the sums entered under heads relating to expenditure on works whether chargeable to capital or to revenue.'[36]

The inability on the part of the railways to spend the funds allotted also had other adverse reactions on the financial position of the Government of India. The Government of India borrowed money on capital account for railway purposes. If the entire amount was not utilized, Government would have to incur loss on account of the balance on which interest would be payable.

To avoid these difficulties, the Railway Board hit upon the system of 'over-allotment'. According to this system, the estimates submitted by railway administrations were reduced by means of lump cuts, but they were told to pay no attention whatever to the lump cuts : they could spend up to the amounts they had themselves asked for in the budget. The idea behind this was that the Railway Board, on the experience of previous years, anticipated that the railways would not be able to use the entire amounts they had asked for and made a lump sum reduction, which they considered might be the amount of underspending.

The system of over-allotment was tried for three years, 1925-8. According to the arrangements introduced during this period, the Agents' estimates were fully sanctioned, but as the Railway Board allowed for some savings on these, they presented in the Railway Budget a reduced grant. A glance at the following figures[37] will indicate how the system worked.

(*Rs. in crores*)

Year	Agents' estimates	Railway Board's estimates	Actuals	% of Agent's estimates	Excess of Agent's estimates		+ or — compared to Budget estimates
	Rs.	Rs.	Rs.		Rs.	%	Rs.
1925-6	32·07	22·90	19·25	60	12·82	40	−3·65
1926-7	34·58	26·00	27·14	78	7·44	22	+1·14
1927-8	39·77	25·00	32·44	82	7·33	18	+7·44

[36] *Public Accounts Committee Report* 1924-5, Vol. I, p. 9.
[37] Figures are taken from the memoranda on the Railway Budget for the years referred to.

In 1925-6 the Railway Board fixed the amount of the capital grant at Rs. 22·90 crores, as against the Agents' estimates of Rs. 32·07 crores, and there was shortspending to the extent of Rs. 12·82 crores on the Agents' estimates and Rs. 3·65 crores on the Railway Board's estimate. There was overspending in the next two years amounting to Rs. 1·14 crores and Rs. 7·44 crores respectively on the budget estimates, but still underspending as compared with the Agents' estimates, to the extent of 22 per cent and 18 per cent respectively of what they had asked for. On these bases, obviously there can be no meaning or value to the budget. If the budget is an instrument of ensuring control over expenditure, the very assumptions of the over-allotment system militated against the objects sought to be attained by a budget. Under the principle of over-allotment, the budget is less an estimate of the proper prospective expenditure than the Railway Board's estimate of the capacity of the railway administrations to spend. 'The principal difficulty with which we are now confronted,' complained Sir Charles Innes in his budget speech for 1926-7, 'is that of spending the money—that is, of executing rapidly sanctioned projects.' This explains the sudden expansion of the agencies for construction and the desire to speed up the completion of works. Throughout the railway papers of this period, references are frequently found to the desirability and the necessity of hurrying on projects to completion.[38] Accordingly efforts were made to simplify the process of preparing estimates and of securing sanction. Increased powers were

[38] Sir Charles Innes said in his budget speech for 1925-6 : 'I am confident that the House will thoroughly approve of a bold policy of remunerative railway development.' *Budget for 1925-6*, p. 8.

In the following year, he again stated : 'The policy we are working to is that we are willing and anxious to construct any new lines provided we are satisfied that they will be remunerative....We have also impressed on railway administrations their responsibilities for developing the areas within their respective spheres of influence by bringing to our notice promising schemes of railway development within those areas.' *Budget for 1926-7*, p. 7.

Also compare : 'We have taken special steps to expedite the process of obtaining approval to works of proved necessity, and have simplified the system of preparing and submitting estimates and for the certification of indents, and we have also delegated larger powers of sanction to Agents and boards of directors....We do not propose to restrict expenditure on sanctioned works as it is of obvious advantage, once they are sanctioned, to expedite them as much as possible.' Chief Commissioner's speech, *Budget for 1926-7*, pp. 35-6.

obtained from the Secretary of State for India by the Railway Board, as a result of which many projects which could not be undertaken without the sanction of the former could now be started with the sanction of the Government of India. The Agents of the state-managed railways and the boards of directors of the company-managed railways were given additional powers to start new schemes. As the railway organization on the existing basis proved inadequate, the engineering departments were strengthened on the construction side and contractors were employed on a large scale to expedite work. These were some of the measures adopted to increase effectively the capital-using capacity of the railways. The psychology of the times is indicated by the fact that during 1927-8, a hundred new projects and 4,600 miles of construction were on hand. Speaking in 1927, Mr. (later Sir) Clement Hindley, Chief Commissioner of Railways, declared : 'If our present quinquennial program does not come in for very drastic revision either for financial reasons or other difficulties, there is no reason to anticipate any serious dropping off from this (annual) figure of 1,000 miles as the rate of progress for several years to come.'[39] To obviate unexpected difficulties such as those connected with acquisition of land, which might hold up progress of work, alternative projects were also included so that in the event of any development holding up or delaying work in connection with any particular project, the railways could proceed with alternative schemes.[40]

[39] *Budget for 1927-8*, p. 34.

[40] The following discussion by the Public Accounts Committee for 1927-8 may be read with interest in this connection :

Mr. Rau (Financial Commissioner) : 'We must not be prevented from starting new constructions in anticipation, provided we obtain the approval of the Standing Finance Committee for Railways. We can obtain a formal grant from the Assembly later. . . .The expenditure at the start would be very little.'

Chairman (Sir George Schuster) : 'We are not concerned with the expenditure at the start. It may be a lakh or so in the first year, but eventually you may be committed to crores.'

Mr. Rau : 'If we were to put in our budgets only lines which have been sanctioned, it might create difficulties. We shall have to put in our budgets quite a large number of lines which are still under consideration. Some of them might be quite good, but there might be difficulties in spending money on those lines on account of land acquisition, sometimes on account of negotiations with other railways and so on. For instance, lines which have been sanctioned two years ago, I think, in the G.I.P. Railway, are still held up because the negotiations with the Nizam's Government have not been concluded. So it does happen that all the money cannot be utilized and our

The anxiety to avoid unspent grants, the encouragement afforded by the Railway Board and the Legislature, and the psychological influence of the prosperous years were in the main responsible for the adoption and execution of schemes which turned out later to be ill-justified. That the Railway Board, as the Railway Department of the Government of India, had a large share of responsibility for the initiative and direction in this matter has been made abundantly clear. An instance of this may be seen in the practice of sanctioning projects on 'abstract' estimates, instead of detailed estimates. Mr. Sim, Financial Commissioner of Railways, stated in 1925 that

> 'Under the present procedure sanctions for works were accorded by the Railway Board on abstract estimates, which gave broad details, but before work was started detailed estimates for each part had to be prepared and sanctioned by the Agent or chief engineer. When once the detailed estimates had been sanctioned, the local authorities could go on incurring expenditure so long as they did not exceed the limits in the abstract estimates.'[41]

The estimates prepared in detail were not to exceed a fixed percentage. In quite a number of cases, as construction proceeded, the estimates had to be revised. Early in 1930 the Director of Railway Audit in his report for 1928-9 complained that 'all constructions on the Eastern Bengal Railway were undertaken prior to sanction of the detailed estimates

construction staff will remain unoccupied. If we are quite sure that another project, if started at once, would be more remunerative, then our practice is to start it immediately after obtaining the approval of the Standing Finance Committee for Railways. It would be more economical to do so, because we should not be keeping our construction staff unemployed. Whether there is provision for such work or not, we start it at once with the idea of obtaining a supplementary grant when the Assembly is in session.'

Chairman : 'You might have included in your budget a new branch line which would cost, say, Rs. 50 lakhs, of which you would be spending, say, Rs. 6 lakhs in the current year. You might find for the reasons you have stated that you were not able to spend the amount that year on that project, but the project which you are going to substitute for the 50 lakhs might be a 5 crore project. In a case like that you would be putting a heavy responsibility on the Standing Finance Committee ?'

Mr. Rau : 'I daresay that we would not think of starting such a Railway without the special sanction of the Assembly.'

Chairman : 'I do not think we can accept that statement....This committee should say that whatever latitude is allowed it should not attempt to substitute for a project which had been put before the Legislative Assembly another more costly project although in a particular year it would not cost more than the sum already provided for.' *Public Accounts Committee's Report* 1927-8, Vol. II, Evidence, pp. 324-5.

[41] *Public Accounts Committee's Report* 1923-4, Vol. I, p. 65.

therefor.'[42] Thus in the case of the Kalukhali-Bhatiapara Railway, before the detailed estimates were ready, expenditure on construction was already booked. It is obvious that under such a procedure an estimate ceases to be an estimate of the probable expenditure and possesses little value. As an instance of the type of cases where the original estimates were falsified may be mentioned that of a certain new line on a certain railway on which the history of the sanction of estimates was given as follows :

(In lakhs of Rs.)

Year	Estimate	Est. value of earthwork
1925	73	16
1926	90	27
1927	92	30
1928	94	31
1929	96	33

The revised estimate in 1929 was 30 per cent higher than the original figure. The Agent submitted still another revised estimate in February 1930 for Rs. 97 lakhs, which the Railway Board declined to sanction, and the Agent informed the Board on receipt of their decision that he would work within the limit of Rs. 96 lakhs.[43] Even this increase is small as com-

[42] The Director of Railway Audit observed : 'In the absence of detailed estimates as required under the rules, effective control could not be exercised over the expenditure on works and a comparison with the provision made in the abstract estimate was consequently all that was possible. As a result of the absence of detailed estimates, material modifications of a sanctioned project, *i.e.*, omission of a station provided for in the detailed estimate, and the construction of several additional quarters and a goods shed over and above the provision in the detailed estimate, could not be brought to light in time.' *Report on the Appropriation Accounts of Railways in India 1928-9*, para. 101, p. 61.

[43] The Director of Railway Audit observed in connexion with this case : 'The Administration has explained that the excess under earthwork was " primarily due to work having been sanctioned on preliminary surveys instead of on detailed surveys." "It is impossible to ascertain before the work is commenced the exact nature of the soil that may be encountered unless a large number of trial borings are taken at the time the estimate is prepared. This is only done when a detailed survey is made. In all cases, lines have been sanctioned on preliminary surveys. The estimate for the . . . Railway was on such a survey and on a superficial view of the ground : and it was found later that the subsoil was considerably harder than was expected." In returning the last revised estimate unsanctioned, the Railway Board conveyed their sense of disapproval that it had been necessary for the Agent to apply again for further sanction and observed "the original estimate sanctioned by the Secretary of State in 1925 was Rs. 73.30 lakhs, and the fact that it has been necessary to revise this on four occasions reflected great discredit on the way the estimates have been prepared by the engineers. The line will now apparently cost practically 33 per cent more than was anticipated and the return expected will fall from 8 per cent to under 6 per cent".'

By 1930, as will be seen from the text, the credit of the State found itself in a serious plight, so that drastic control of expenditure was exercised. A couple of years earlier and the Agent might have got his sanction and the extra lakhs ! *Report on Appropriation Accounts of Railways in India* 1929-30 by the Director of Railway Audit, p. 60.

pared with the increase of 106 per cent in the estimated value of earthwork included in the project.

THE KANGRA VALLEY RAILWAY

Some idea as to the circumstances in which new construction projects were evolved may be indicated by one or two instances. The case of the Kangra Valley Railway, by reason of the abnormal increase in capital cost, takes precedence and may be dealt with first.

Proposals to construct a narrow gauge railway in the Kangra Valley with the object of opening up the rich Kulu and Kangra valleys date back to 1912 and 1914. Preliminary surveys were undertaken in those two years and the prospects did not appear to be sufficiently remunerative and the idea was dropped. The proposal was, however, revived in 1925, when the Punjab Government investigated the Uhl hydro-electric scheme and proposed to include a metre gauge tramway from the railway terminus at Mukherian to Shanan, near Mandi in the Kangra Valley, to transport heavy plant and machinery to the headworks. The line was also considered necessary for the upkeep and patrolling of the transmission lines even after the completion of the project. The Punjab Government thought that the line could subsequently serve as a means of communication between the Kangra Valley and the plains for passenger and goods traffic. The Local Government intimated to the Railway Board that, with the approval of the Governor-General in Council, they proposed to issue an order under the Indian Tramways Act, and enquired if the Board had any objections to the proposals from their point of view.

The Railway Board had already examined in 1923 a scheme to extend the Jullundur-Mukherian branch at Talawara, a distance of 18½ miles, in connexion with certain proposals of the Punjab Government concerning the installation of a saw-mill and a paper factory, at a cost of Rs. 17·33 lakhs. It appeared subsequently that the saw-mill would not materialize for some years to come and that when they did they were expected to be on a much smaller scale than originally contem-

plated. The scheme was thus shelved. Now in view of the proposals of the Punjab Government, the Railway Board brought up this extension scheme by stating that eventually it would be worth while. The Punjab Government, however, could not agree to this extension, as they were depending a good deal on the prospective earnings of the tramway between Mukherian and Talawara to help the financial justification of the scheme. After further discussion of the proposals with the Punjab Government, it was finally agreed to construct a 2′ 6″ gauge railway starting from Pathankot instead of from Mukherian.

When the proposal for the construction of the Kangra Valley Railway was formally placed before the Standing Finance Committee for Railways, it was mentioned that a preliminary survey had already been carried out and that the figures of the previous surveys on the proposed alignment were brought up to date. The project as formally submitted was to construct a 2′ 6″ gauge railway from Pathankot to Shanan, covering a distance of 100·6 miles. The expenditure required to complete the construction of the railway was estimated at Rs. 113·80 lakhs, or Rs. 1,13,123 per mile, if a ruling grade of 1 in 22½ were used on the ghat section and 1 in 50 on the remaining portion. A realignment of the ghat section on a ruling grade of 1 in 40 or 1 in 50 at an additional cost of about Rs. 20 lakhs was also suggested as being justified by the resulting decrease in working expenses. The gross earnings were placed at Rs. 12 lakhs, or Rs. 230 per mile per week, in the third year after opening to public traffic. With the development of the country, it was estimated that there would be 'an increase at the rate of 8 per cent for several years.' The cost of working traffic was calculated at Rs. 8·40 lakhs annually, representing an operating ratio of 65 or 70 per cent of the gross earnings.

The economic possibilities of developing the region were stated in no uncertain terms. The area to be served by the proposed railway was richly cultivated, and had considerable

forest areas at a comparatively low elevation. The Kangra District, stated the Financial Commissioner, Railways, in endorsing the scheme, 'is rich in antiquities, and there are several temples which form important places of pilgrimage for people in the Punjab. Kulu, or the upper valley of the Beas, is eminently suited for the production of all kinds of fruits and vegetables, and it is anticipated that the proposed line will help considerably in developing the cultivation and export of these commodities. The projected railway will also improve the accessibility of the hill stations of Dalhousie and Dharamsala and, it is expected, also encourage the formation of summer resorts for the residents of Lahore and Amritsar in the valley itself. The principal exports will be rice, tea, potatoes, spices, wool and fruit, in return for which will be imported wheat, maize, gram and other pulses, tobacco, kerosine oil and piecegoods.'[44]

The financial prospects of the Railway in the third year after opening were tabulated as follows :

KANGRA VALLEY RAILWAY

		Rs. in lakhs
Capital cost (including interest during construction) ..		1,50·00
Gross earnings, including a reasonable addition to the gross earnings of the main line		14·00
Working expenses		9·80
Net earnings		4·20
Loss in working		4·05
Net return on capital	2·8%	

The Standing Finance Committee were also told that the Punjab Government had agreed to guarantee the Government of India against loss in the working of the proposed railway.

ADDENDUM

Footnote 45, page 83.

Add after the first line to read :

[45] The nature of the difficulties experienced in the construction of the Kangra Valley Railway has to be borne in mind in considering the final cost of construction. The line was by no means a solitary black sheep in an otherwise respectable flock : there was another to which it was later to be compared, the Khyber Railway. started by the Railway Board. without proper estimates, the unique experience of which unfortunately came too late to be of any use for the Kangra Valley. The character of the construction of the Khyber Railway was described by Sir Austen Hadow, Chief Commissioner, Railways, in a note

Railways afterwards stated that 'it was very difficult to estimate the cost as no one knew or could anticipate what difficulties would be experienced in the actual construction of the railway through this very rough country, where much tunnelling would be necessary.' The result was an enormous increase in the costs of construction from Rs. 134 lakhs to Rs. 296 lakhs, when the railway was opened to public traffic on 1 April 1929. So serious a divergence from the original estimate naturally raised severe criticism. In examining the accounts for 1927-8, the Public Accounts Committee raised the question as to the reasons for this abnormal divergence and some light was thrown on the procedure followed in connexion with the starting of the project. It came out that construction was started with-

supplied to the Public Accounts Committee for 1927-8. Sir Austen stated: 'The completion of the line and the overcoming of all the difficulties involved were considered a matter for congratulation in November 1925, when the line was opened up to Landi Kotal, and there is no doubt that if it had not been for the defective work subsequently discovered in some of the tunnels, every one connected with the project would have been credited with a specially good piece of work.

'As regards the tunnels, the first we heard of anything being wrong was in March 1927, when, in sending in a report enumerating certain additional works considered necessary as a result of the advice of a geological expert and a report by a committee of engineers on damages caused by a record flood in September 1926, the agent mentioned that "it might be necessary to strengthen some of the lining that had been put in already in some tunnels." In April 1927 we were told demi-officially that the Michni tunnel was unsafe (this was the sixth tunnel west of Landi Kotal) and that a good deal of the tunnel lining done during construction would have to be redone. The examination of the suspected tunnels took some time; it is, of course, a rather difficult matter as a good many holes had to be dug in the crown of the tunnel for examination to be made. As a result of this examination it was reported in October 1927 that it would cost approximately Rs. 15 lakhs to put the defects right. The Chief Commissioner, who was then the Engineering Member of the Board, visited the Khyber in November 1927 to look into the matter personally, and wrote a note in which he covered other matters besides these defective tunnels; one point was that there had been two serious floods in the Khyber which had shown the necessity for some change in design of some of the works and he was examining this at the same time.

'The defects in construction that came to light may be classed under two heads: (*a*) lack of mortar, and (*b*) hollows left behind the masonry. They came to notice by bulging and crushing of the masonry. The action then taken was in two directions: (*i*) to a consideration of the best methods to be adopted in putting matters right and making the tunnels more secure in the future; (*ii*) to the fixing of responsibility for the defective work.' *Public Accounts Committee Report* 1927-8, Vol. I, p. 275.

The other points brought out were that none of the officers had any experience in difficult tunnel work in India, and a number of tunnels presented, particularly beyond Landi Kotal where the bad work appeared, very exceptional difficulties. The conditions of work were also unusual, for the political authorities imposed restrictions, as the pass was occupied by warlike tribes, and no officer was allowed to go without armed escort. The tunnels were all guarded during the progress of work. Excavation and timbering was in progress day and night under contract but masonry work was done during daylight only. All the staff employed including labourers, unless working under guard, had to be back in their quarters by sunset and were not allowed to leave until sunrise. To avoid trouble during work, contracts were given to local *maliks* who were totally inexperienced and work had to be sublet to others. Finally, seriously inadequate supervision was also attributed to the engineer who was in charge and was considered blameworthy.

out any detailed estimates,[46] which was a departure from the normal procedure. The principal officials of the Railway Board admitted that the construction of the railway would never have taken place if the detailed estimates of the project had been prepared. The whole case was examined by a committee of enquiry, and the report with the observations of the Government of India was placed before the Secretary of State, who remarked that 'the initial and principal mistake lay in the commencement of the project on the basis of inaccurate and inadequate data.'[47]

The history of the Kangra Valley Railway may now be concluded with a reference to the financial results of working since 1928-9. The following table presents the detailed figures for 1928-37 :

TABLE 14. FINANCIAL RESULTS OF THE KANGRA VALLEY RAILWAY 1928-9 TO 1936-7*

(*Rs. in lakhs*)

Year	Milage	Capital	Gross earn'gs	Net earn'gs	% to Gr. earn'gs	Interest	Loss	Earnings per week	Operating ratio
		Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	
1928-9	103.03	273·16	0·43	—2·46	—0·89	12·63	—15·09	33	666
1929-30		294·83	4·89	—3·80	—1·29	15·08	—18·88	91	178
1930-1	102.99	297·70	7·75	—6·60	—2·22	16·89	—23·49	144	185
1931-2	,,	298·59	8·25	—3·86	—1·29	16·85	—20·71	153	147
1932-3	,,	301·34	5·34	—4·73	—1·57	16·62	—21·35	99	185
1933-4	,,	303·76	4·49	—4·88	—1·61	16·43	—21·31	84	209
1034-5	,,	303·99	3·98	—6·37	—2·09	15·81	—22·17	74	261
1935-6	,,	303·93	3·64	—7·00	—2·30	15·35	—22·35	68	292
1936-7	,,	308·95	3·49	—7·57	—2·45	14·80	—22·37	65	317

* *History of Indian Railways*, Manager, Government of India Press.

THE CALCUTTA CHORD RAILWAY

The exceptional character of the region traversed by the Kangra Valley Railway with considerable tunnelling and

[46] Compare the following discussion which took place during the Public Accounts Committee's meeting :

766-7. *Sir Frederic Gauntlett* (Auditor-General) : 'Why was the Kangra Valley Railway work started before detailed estimates were ready ?'

Mr. P. R. Rau : 'The reason was that the Government of India was in a great hurry about it. They had promised the Punjab Government to have the line ready before the hydro-electric scheme was completed ; therefore all the engineers worked at the highest pressure they were capable of.'

* * *

Sir Frederic Gauntlett : 'One point does emerge out of this Kangra Valley case and it is this. If any real attempt had been made to prepare an estimate before the work had been started, would you ever have dreamt of starting the construction of the work without getting a guarantee from the Punjab Government ? After all, it is the Punjab Government who have got the railway, and you have to pay for the construction of it.' *Public Accounts Committee Report* 1927-8, Vol. II, p. 296.

[47] *Public Accounts Committee Report* 1929-30, Vol. I, p. 275.

constructional difficulties offered some explanation, if not sufficient justification, for the excess over the estimates. We may now turn to a different project, the Calcutta Chord Railway, which was designed to serve Calcutta and its port. The proposal submitted by the Railway Board[48] was to construct a double track chord railway, 8·30 miles in length, connecting Dankuni station on the Burdwan-Howrah Chord with the Eastern Bengal Railway in the vicinity of Dum Dum. The scheme also provided for a double track bridge over the River Hooghly at Bally (without any facilities for foot passengers or road transport) consisting of seven spans of 350 feet, two spans of 120 feet, and two spans of 20 feet. A single track, 1·84 miles in length, was to connect the new Chord to the down lines of the East Indian Railway main lines. A project on similar lines, it appeared, had been under consideration since 1912. As the traffic expected could not, as then anticipated, make it remunerative, it was decided to postpone consideration until a clearer perspective was had of the possible developments at the docks and of the requirements of the town of Calcutta. The Bengal Nagpur Railway, which took some interest in the scheme originally, did not associate itself with the latest phase of it, in view of the development of the Vizagapatam Harbour and the possibilities of diverting its mineral traffic from the Central Provinces, and the coal traffic, to that port through the Hesla-Chandil Railway, then under construction. The Railway Board, however, were confident that in the ordinary course of development the Bengal Nagpur Railway trains would eventually have to be brought to Calcutta, but considered the scheme justified on grounds of the prospective traffic on the East Indian Railway alone. The docks when completed, according to the Port Commissioners of Calcutta, could deal with 4,000 wagons, one half of which was expected from the East Indian Railway. The prospective traffic on that railway would, it was calculated, increase to an average of 600 or 800 wagons a day and the peak traffic

[48] *Proceedings of the Standing Finance Committee for Railways*, Vol. II, No. 3, p. 21 *et seq.*

to 1,000 wagons per day, inwards and outwards. As the existing facilities were incapable of dealing with the number of trains involved, more money would have to be spent to increase the capacity of the sections by quadrupling the Saktighar-Bandel-Naihati route, which involved the strengthening of the Jubilee Bridge on the Bandel-Naihati section. The Calcutta Chord Railway scheme proposed to meet the additional traffic by an alternative route through a new bridge at Bally and a line connecting up the Howrah-Burdwan Chord with the Eastern Bengal Railway.

As regards financial justification, the Financial Commissioner was not quite sure. 'It is somewhat difficult,' he said, 'to justify the Bally Bridge scheme on strictly financial grounds.'[49] But it was considered that there were sufficient arguments on broad grounds alone to justify the project. These were, briefly, that any bridge built in the future might put out of use the works then constructed, and that in spite of a not encouraging trade, traffic was bound to increase in the future; that there was the danger of having the whole of the East Indian Railway's communications with the docks and Calcutta dependent on a single line of communication over a weak bridge and consequently the advisability of having an alternative route; that there were possibilities of improving the suburban passenger services at Calcutta and bringing the proposed electrification of the East Indian and Eastern Bengal Railways into one scheme; that it was desirable to bring about a comprehensive improvement in the terminal facilities at Calcutta; and finally, that there was the important problem of speeding up the coal traffic at the docks. The necessity of starting the construction of the bridge at Bally, which would inevitably take years to complete, was emphasized by the advisability of forestalling traffic improvement in a few years' time, and the action of the Calcutta Port Trust in improving the dock capacity was quoted. The general abstract of the estimated costs presented by the Financial Commissioner, Railways, stated that the total

[49] *Proceedings of the Standing Finance Committee for Railways*, Vol. II, No. 3, p. 24.

expenditure on the entire project would amount to Rs. 179·90 lakhs, or Rs. 17·93 lakhs per mile of the railway. It must be mentioned here that the question of financial justification of the calculations of the return on capital was not dealt with in the memorandum on the project placed before the Standing Finance Committee for Railways. That committee accorded their approval on 5 December 1925, but the Railway Board had already made the necessary arrangements for the acquisition of land, etc., some five months earlier.

The entire project was completed by 1931 and the actual cost came up to Rs. 320 lakhs. For years it appeared a work of doubtful utility. The anticipated increase in traffic did not materialize, and even the actual volume of traffic handled dwindled, while the cost of construction was almost doubled. The prospect of earning the return on the capital invested appears to be rather remote.

Reference may be made here to the construction of another group of railways carried out on terms of guarantee against loss from the provincial governments. One would have expected that here at least the financial interests of the railways would have been protected. But defective estimating of costs led to the fixing of guarantees which were inadequate to avoid losses on certain projects. The case of the Kangra Valley Railway in which a guarantee was obtained from the Punjab Government has already been mentioned. Another instance where the Railway Board made a poor bargain as a result of incorrect estimates was the construction of the Shoranur-Nilambur Railway in the Malabar District by the South Indian Railway. The guarantee in this case was subsequently admitted to have been fixed on a more or less rough and ready basis : 'From the rough estimate of traffic receipts and working expenditure, it was considered that the line would yield unassisted 4 per cent, and the Madras Government was, therefore, expected to pay an additional 2 per cent to make the return of 6 per cent. The actual guarantee was based upon a total of Rs. 69½ lakhs.'[50]

[50] *Public Accounts Committee Report* 1927-8, Vol. I, pp. 252-3.

The revised estimates of the costs of construction came up to Rs. 87 lakhs. The maximum guarantee was fixed at Rs. 1,39,000 on the basis of the original estimates of Rs. 69½ lakhs. This has resulted in a loss to the railway until traffic develops to the point where the return would amount to 6 per cent.

FINANCIAL EFFECT OF OPEN LINE WORKS

We may now proceed to consider the open line works. The Railway Retrenchment Sub-committee, after a review of the character of the expenditure on the projects comprised under this head, observed :

'We put it to the Chief Commissioner of Railways that unlimited funds were probably responsible to a certain extent for some slackness in sanctioning the estimates. Mr. (now Sir) Guthrie Russell thought that "slackness" was too harsh a term to use, but he admitted that the fact that money was easily available had something to do with their taking up schemes rapidly. They had taken an optimistic view, but their policy was to develop the country rapidly, and he thought that this policy would pay sooner or later....We asked the Railway Board whether, in the case of expenditure incurred on open line works, they had, after completion of these works, any means of verifying if they had yielded approximately the return which was anticipated at the time when these works were sanctioned. We were informed in reply that, if the committee meant by return a financial percentage dividend on the capital investment on open line works, the Railway Board had little means readily at hand to verify whether such return has been achieved. This caused us no little surprise, for we had thought that it would be the task of the management of a business concern to ensure that means were readily at hand to see that the actual results of any large scheme undertaken by them were not far out. This is part of the duty of any prudent management, which has an eye on the financial side of the business. It is incomprehensible to us how it can happen that, when the Railway Board have data to calculate the return before they spend the money and when they can produce facts and figures to induce the Standing Finance Committee for Railways to sanction a work on the understanding that it will definitely yield an adequate return, they are not able to have the data to verify their estimates afterwards. The Chief Commissioner of Railways agreed that in normal times they ought to be able to verify their anticipations but he pointed out that at present with such a serious

drop in traffic it would be difficult to draw any conclusions. Moreover, their open line works were all connected with each other. Remodelling of yards, relaying of permanent way, rebuilding of bridges and equipping the railways with heavier locomotives to deal with heavy traffic had to be correlated, and the advantages of any one of these could not be obtained without incurring expenditure on all of them. There are also, we are told, many other disturbing factors which make it difficult to compare the actual results with anticipations, but we have no doubt that it ought to be possible to make allowance for these disturbing factors and attempt to isolate the results of the particular expenditure. In order that the Assembly and the Standing Finance Committee can place confidence in estimates framed by the Railway Board, they should be able to verify whether the yield they expected has been achieved. We urge, therefore, that, the Railway Board should at once take steps to have all data necessary for the purpose maintained, and to impress on railway administrations before sanction is accorded to any proposal that they would be held accountable for proving that a return not far from that which was anticipated had been achieved....There should be automatic machinery to obtain this result.'[51]

The multiplicity and heterogeneity of the classes of works undertaken under the head of open line expenditure, and the interlocking of connected schemes with such items as the permanent way, marshalling yards and strengthening of bridges, render them less amenable to analysis. But on general grounds, they are open to the same criticisms which were advanced earlier against the new construction projects. The probability of ill-advised expenditure on open lines is greater. The bigger and more expensive station buildings may appeal to civic vanity, but their contribution to earning capacity may be doubtful. A considerable portion of the expenditure incurred was more in the class of unproductive embellishments than of improving the service. The fact that funds were freely available, as stated by the Chief Commissioner to the Retrenchment Sub-committee, and could be had for the mere asking, as it were, must have led to fancy as well as necessary and useful schemes being proposed, accepted, financed and carried out. The facility with which the railways could embark on very large expenditures without even scrutinizing their full

[51] *Railway Retrenchment Sub-Committee Report*, paras 122-3, pp. 43-4.

implications is readily illustrated. Take, for instance, the case of the automatic couplers for which over one crore of rupees was proposed and of which Rs. 70 lakhs were allotted for expenditure during 1925-6. When the proposal was first brought up, it was resolutely opposed by the non-official members of the Assembly, and a motion for reduction was defeated at the instance of Government, which insisted that this provision was absolutely necessary. The entire provision lapsed towards the close of 1925-6. It was later admitted that the provision was made before the Railway Board had really arrived at a decision on the type of automatic couplers to be used and the kind of transition device to be employed.[52]

Another instance of the same type is afforded by the proposal for a drainage canal on the Kadu Lake on the Burma

[52] The following extracts from the proceedings of the Public Accounts Committee throw further light on this question:

Mr. Joshi: 'Have you given up the idea of automatic couplers?'

Mr. Parsons: 'They are still examining what types of automatic coupler should be adopted and also about their cost. There is no doubt the cost will considerably increase over and above what we expected at the beginning.'

* * *

Chairman: 'It is really a general question. Provision is made for automatic couplers entailing considerable expenditure this year and in the end nothing has been spent. What is your justification for including the sum of Rs. 70 lakhs for this expenditure in the original estimates?'

Mr. Parsons: 'Because at the time they expected to spend it and subsequently they found difficulties in deciding on the type of automatic couplers that are to be used.'

Chairman: 'Surely, at the time when the Rs. 70 lakhs was inserted you had reached a stage when you had decided on the particular kind of automatic coupler to be used?'

Mr. Hayman (Director of Finance): 'Yes, that is so. The technical side informed Mr. Sim that they would be able to decide within the year upon a particular class of automatic coupler, but there were difficulties about getting a suitable transition device. They hoped that they would be able to incur the expenditure in the course of the year. When this transition device question was being discussed, other questions arose. Naturally we are investigating the whole question. We want to adopt the most suitable form of coupler; one which would be most economical.'

Chairman: 'It really comes to this, that provision was made for a particular expenditure before you had really arrived at a decision as to the particular kind of automatic coupler to be used.'

Mr. Hayman: 'I would say, that this was partly so.'

* * *

Mr. H. G. Cocke: 'My recollection was that it was put as a tentative provision.'

Mr. Rangaswami Iyengar: 'My recollection is to the contrary. My recollection is they said, "This is the first instalment. If this provision is finished, we will have to buy automatic couplers right through in all the railways which could entail much larger expenditure. We are going to spend this sum this year and in subsequent years we will come for larger expenditure." Is it not rather strange to embark on a scheme like that without proper investigation or scrutiny and without any sort of check?'

Mr. Parsons: 'There was a very careful check and scrutiny on the technical side.'

Chairman: 'I think we are entitled to make some comments because the technical officers were allowed to swell the budget by putting in this provision in the budget.'

Public Accounts Committee Report **1925-6, Vol. II, pp. 303-5.**

Railways. Owing to heavy rains in 1928, the lake had increased from about 3 square miles to 70 square miles, and the water level had risen about 8 inches above rail level, which necessitated a suspension of all traffic. It was proposed to lower the level by cutting a spillway from the south end of the lake and allow the water to escape on the lower ground north of the Alor Branch to another lake connected with the Irrawaddy River. In February 1928, the Government of India sanctioned an estimate of Rs. 9·82 lakhs for the work, and again in November 1928 a revised estimate of Rs. 15 lakhs chargeable to capital. Similarly, two major works, the Lower Sone Bridge, estimated at Rs. 35 lakhs, and the Jumna regirdering, estimated at Rs. 32 lakhs, were sanctioned in 1926-7 on the basis of abstract estimates alone. No detailed estimates were either prepared or sanctioned. When this was brought to light, the chief engineer reported that the first scheme was practically completed and that the detailed estimates were under preparation; and as regards the other, that the work had been finished and no purpose would be served by the preparation of detailed *estimates*! These instances taken at random from the post-separation program of open line works indicate that financial considerations were not given adequate attention in the adoption and execution of the capital schemes.

PRODUCTIVITY OF RAILWAY INVESTMENT

It is not easy to test the productivity of all the capital expended on open line works. The instances already mentioned of the policies that inspired capital expenditure indicate that there has been a large element of over-estimation, excessive expenditure on projects of doubtful immediate financial return, and consequent lowering in the return on railway capital. The Wedgwood Committee, commenting in 1937 on the effects of capital expenditure on open line works, stated:

'We cannot help feeling that, in the past fifteen years, stations, workshops and marshalling yards have often been built to be the last word in

railway technique rather than on a careful calculation of probable requirements, and that prestige has perhaps counted for more than prudence. It is the worst feature of such overgrown schemes that they continue to burden the railways with excessive costs of maintenance and operation quite apart from the excessive interest charge involved.'[53]

We may conclude the present survey of the capital program since the separation with a brief examination of its effects on railway finance as a whole. The immediate effect of the additions to capital was the inflation of fixed charges, particularly on account of interest.[54] The trend as regards interest charges during 1924-32 will be clear from the figures in the following table:

TABLE 15. STATEMENT OF CAPITAL AT CHARGE AND INTEREST CHARGES *

(*Rs. in crores*)

Year	Capital	Interest	Percentage to capital	Percentage of net revenue to capital	Mean yield of 3½ % securities
	Rs.	Rs.			
1920-1	585	19·88	3·4	4·5	6·3
1924-5	643	23·90	3·7	5·8	5·4
1925-6	663	24·81	3·7	5·1	5·0
1926-7	690	25·87	3·8	4·8	4·6
1927-8	722	27·27	3·8	5·3	4·6
1928-9	747	29·33	3·9	5·0	4·8
1929-30	778	30·46	3·9	4·4	5·2
1930-1	791	33·72	4·2	3·5	5·4
1931-2	798	33·07	4·1	3·0	6·2

* Figures for capital, interest and percentage for net revenues for 1924-32 taken from *Explanatory Memorandum to Railway Budget* 1936-7.

It will be observed that interest charges had gone up at the end of 1931-2 by about 40 per cent, whereas the capital

[53] Report of the Indian Railway Enquiry Committee, hereinafter referred to as the *Wedgwood Committee Report*, para 74, p. 43.

[54] The calculation of interest on the capital at charge of the Indian Railways is by a special procedure. The capital required by the railways is provided by Government by borrowings by the Government of India and the Secretary of State. The public debt on this account consists of the 'Specific' Debt amounting approximately to one-sixth of the total. On this interest is fixed at the rate at which the loans were raised. As regards the balance, amounting to about five-sixths of the total railway capital, it forms part of the 'Non-specific' Debt of the Government of India. On this interest is worked out not on the actual cost of borrowing but at the average rate for the year on the mean non-specific debt of India. The average itself is split up into two, a certain rate for the expenditure incurred up to 1916-7, and a different rate on the capital provided subsequent to that year. Thus during the period covered by the present survey, 1924-32, the interest on the expenditure up to the year 1916-7 was 3·33 per cent, while that on the subsequent expenditure has varied from 5·31 per cent to 5·70 per cent. Thus the interest charges on the capital raised after 1916-7 are not fixed; they fluctuate from year to year.

at charge had increased by only 25 per cent. As will be found later, much of the subsequent difficulties of railways to earn profits sufficient to cover interest on capital is to be attributed to the rapid increase of interest charges. Firstly, the additional capital did not produce a corresponding return. Secondly, it may be noticed that the percentage of net revenue to capital gradually came down from 5·8 per cent to 3 per cent in 1931-2. Thirdly, the comparative yields from railway capital, and from 3½ per cent securities which are looked upon as the barometer of the capital market, show marked differences. While the cost of borrowing had gone up considerably, the rate which the railways were paying on their capital was well below the current market rates. The comparison of the percentage of net traffic receipts to railway capital and the mean yield on 3½ per cent securities indicates that railway earnings were not abnormally or unusually large during the immediate post-separation years, and that during the last three years of the period under review, net receipts remained materially below the market yield on capital, the difference amounting to more than half of the latter in the last year.

It may be readily conceded that the expenditure incurred, the improvements effected, and the constructions completed have rendered the Indian railways a far more efficient instrument for transportation than they were a few years ago. But the present survey indicates that the achievements have not been altogether commensurate with the costs. In fairness to the railways, it must also be stated that the psychology of the prosperous period favoured that policy, and this is indicated by the exaggerated terms in which the need for improvement was emphasised by the Acworth and other committees,[55] and the funds granted by the Legislature. The

[55] The Wedgwood Committee observed: 'We recognize that circumstances in the post-war decade encouraged optimistic expectations which have not so far been realized. We recognize also that a good deal of the capital expenditure incurred was at the instance of and under pressure from Government authorities. There remains, however, a considerable residue of expenditure which, in our opinion, must be attributed to a deficient sense of proportion on the part of the railways themselves.' *Wedgwood Committee Report*, para 74, p. 43.

post-war boom created an atmosphere of optimism which did not brook the idea that prosperity might be short-lived. Capital expenditure was accordingly incurred, to quote the Wedgwood Committee, on 'too lavish a scale.' Many of the open line and construction projects were over-capitalized, and in some cases were even unnecessary. But their title to financial justification was never afforded an opportunity of being proved, for the depression started within a year or two of the completion of the schemes. If experience arises from making mistakes, the Indian railways have compassed a rich legacy of it for many years to come; and if the value of experience is to make one more careful, the record of the post-separation years decidedly had the effect of making railways more cautious in their estimates, more circumspect about new schemes, and certainly more rigorous in their financial control. With the broadening bases of our economic life, there can be no doubt that expanding production and consumption may overtake the additional capacity represented by much of the physical assets added through the capital programs. War-time experience since 1939 has already shown that the additional capacity provided has proved an asset of great value.

We have discussed in this chapter the extent and improvement of the physical assets of the Indian railways during the post-separation years. As transport is essentially a physical operation, the adequacy and efficiency of railway equipment have an important bearing on the financial results of working. The final test of the wisdom of capital expenditure, the utilization of assets and the policy of pricing transport is afforded by the ability of the railways to earn enough to meet the expenses incurred, to pay interest on capital, and to leave a balance as profits. To this subject, the financial condition of the Indian railways during the post-separation years, we now turn our attention.

CHAPTER III

FINANCIAL STATUS OF INDIAN RAILWAYS

THE financial results of State-owned railways during the early twenties, it may be recalled, caused a great deal of concern to Government and the public alike. Railways had failed to earn profits and threatened to become a liability to the taxpayer. The attention of three committees—the Acworth, Hailey and Inchcape Committees—was, as already mentioned, directed to the unsatisfactory state of railway finance and their recommendations were designed to improve operating results. The measures adopted to give effect to the recommendations of these committees culminating in the separation of railway finance had for their principal object the rehabilitation of the finances of State-owned railways. The Separation Convention required State-owned railways to be operated on commercial principles and to pay the State a definite rate of contribution. The results of railway working since 1924 have, therefore, to be judged in the light of their success in conforming to these standards of operation. Before proceeding to discuss the performance of individual railways during the post-separation

period, it will be helpful to examine the financial position of Indian railways, treated as a single system.

THE OPERATING RATIO

To obtain a true picture of the financial position of Indian railways, it is necessary to consider not merely the situation in 1924-5 or any particular year in the pre-war or the post-war decade, but also the trend over a longer range. It will be sufficient for our present purpose to extend our survey back to 1900. In an attempt to appraise the financial results of railway operation, the 'operating ratio' provides a valuable index. The operating ratio expresses the relation between the total gross earnings and working expenses. It is computed by dividing working expenses by gross earnings. Working expenses do not, of course, include interest or profits. An operating ratio of 100 implies that the expenses of providing transportation are equal to the total receipts from the patrons of the railway and that nothing is left for the payment of interest on capital invested in the undertaking or profits to the entrepreneurs. The lower the operating ratio, the more favourable the results for the railway. Every railway management consequently endeavours to keep down the operating ratio in order to increase profits.

The operating ratios of Indian railways treated as a single system for the period 1900—1936-7 are shown in Table 16. It will be noticed that the ratio during the greater part of the first decade, 1900-9, remained below 50 and that during the last three years it rose to 60 and declined to 56. During the next decade, 1910—1919-20, the ratio oscillated between 46 and 57 with a tendency rather to go up than to come down. The developments during 1914-8 on account of the war with its restrictions, abnormal movements and higher cost of materials, were reflected in the operating ratios of these years, despite the counterbalancing effects of arrears in maintenance, repairs and replacements, which, if they had been carried out, might have increased considerably the

TABLE 16. RAILWAY OPERATING RATIOS*

(ALL RAILWAYS)

(*Rs. in crores*)

Year	Gross earnings Rs.	Working expenses Rs.	Operating ratio
1900	31·54	15·09	47·85
1901	33·60	15·72	46·79
1902	33·93	16·70	49·24
1903	36·01	17·11	47·52
1904	39·65	18·78	47·36
1905	41·70	19·95	47·85
1906	44·14	22·02	49·89
1907	47·31	24·32	51·42
1908	44·83	27·00	60·24
1909	47·06	26·38	56·06
1910	51·14	27·16	53·10
1911	55·28	28·84	52·17
1912	61·65	30·16	48·92
1913 1st Qr.	16·24	8·49	52·28
1913-4	63·59	32·93	51·79
1914-5	60·42	32·74	54·19
1915-6	64·66	32·92	50·91
1916-7	70·68	33·40	47·26
1917-8	77·36	35·37	45·72
1918-9	86·29	41·80	48·45
1919-20	89·15	50·66	56·81
1920-1	91·99	60·29	65·54
1921-2	92·89	70·80	76·22
1922-3	105·65	72·99	69·09
1923-4	107·80	68·45	63·50
1924-5	114·75	69·37	60·45
1925-6	113·39	71·09	62·69
1926-7	112·36	69·70	62·04
1927-8	118·26	72·60	61·39
1928-9	118·87	74·62	62·77
1929-30	116·08	75·49	65·02
1930-1	106·57	74·23	69·66
1931-2	97·21	69·09	71·08
1932-3	96·21	68·90	71·61
1933-4	99·58	69·54	69·84
1934-5	102·81	70·60	68·67
1935-6	103·84	70·94	68·31
1936-7	108·07	69·93	64·74

* Compiled from the *Administration* and *Railway Board's Reports*, Vol. II for each year.

working expenses and, therefore, the operating ratio. The period was also characterized by a steady growth of earnings and a progressive increase of expenditure. But the proportion of increase in expenditure was greater than that in earnings.

The operating ratio for 1920-1 stood at 65·5. The Railway Board stated in its report for 1920-1 :

> 'The abnormal increase in working expenses of railways . . . is a matter of very great concern to those who are responsible for the administration. It is also a question in which the public is very intimately interested, since, unless some counteracting method can be devised, the result must eventually be reflected in a rise in the cost of transport or, in other words, in increased rates and fares. . . . If railways are to maintain their former financial status, the Railways must be prepared either to check this tendency by economy or to neutralize it by increased earning capacity.'[1]

In the following year, 1921-2, the ratio rose still higher, reaching 76 per cent of the gross earnings, the increase over the previous year's proportion having been no less than 10·7 per cent. 'Working expenses have risen to an unprecedented degree and the earning power of the lines has not responded,' complained the Railway Board.[2] The year 1921-2 proved to be a deficit one. After an attempt to locate the permanent and temporary causes, the Railway Board hoped that 'a sensible degree of our present inflated working expenses will disappear gradually as the lines are brought back to normal conditions.'[3] In the following year, allowing for extensive economies and retrenchments, the Inchcape Committee fixed the limit of Rs. 64 crores for the working expenses. Not only was this figure not maintained, but the performance during subsequent years tended more to keep the operating ratio above 60 than to bring it down to the pre-war level.

The financial results of all railways from 1920-1 to 1929-30 indicate a steady increase in gross revenues. But working expenses, which had remained relatively stationary at the beginning, gradually increased to Rs. 75·49 crores in 1929-30. The operating ratio also records a similar upward movement from the year 1927-8 onwards. Although a reduction during the decade from a ratio of 76·22 to 65·02 is substantial, it is still a long way from the pre-war level of 50.

1 *Railways in India Administration Report* 1920-1, Vol. I, pp. 21-2.
2 *Indian Railways Administration Report* 1921-2, Vol. I, p. 6.
3 Ibid, p. 21.

We may now turn for a moment to the trend, during the post-war decade, of gross earnings and working expenses, the two variables from which the operating ratio is derived. Taking the average of the three years ended 1913-4 as the base, the percentage relation of gross earnings and working expenses during the post-war decade may be seen from the figures given in Table 17.

TABLE 17. PERCENTAGES OF GROSS EARNINGS AND WORKING EXPENSES

Year	Percentage of G.E.	Percentage of W.E.	Year	Percentage of G.E.	Percentage of W.E.
1911-3/4	100·00	100·00	1929-30	192·92	246·38
1921-2	154·37	231·07	1930-1	177·11	242·26
1922-3	175·58	238·21	1931-2	161·56	225·49
1923-4	179·16	223.40	1932-3	159·88	224·87
1924-5	190·71	226·40	1933-4	165·50	226·96
1925-6	188·44	232·07	1934-5	170·87	230·41
1926-7	186·74	227·48	1935-6	172·58	231·52
1927-8	196·54	236·95	1936-7	179·61	228·23
1928-9	197·55	243·54			

An examination of these percentages indicates that the increase in working expenses has been greater throughout. In 1921-2 working expenses had increased to 231, while gross earnings had gone up to only 154. Railway earnings gradually increased to 198 by 1928-9, representing the high-water mark of railway revenues. Working expenses, despite the retrenchment measures of 1922-3, fluctuated between 231 and 237, and rose to 244 and 246 in 1928-9 and 1929-30 respectively. The percentages clearly prove that working expenditure had stuck at a higher level, which in 1929-30 stood at two and half times the basic figure. It looks like a partnership between a slow steed and a fast pacer : railway revenues failed to keep step with the increase in expenditure.

During the period of the depression, 1930-7, working expenses decreased from 242 to 225 in 1931-2 and remained at that level till March 1933. There has been a tendency for the percentage to rise slightly since that year. The reduction reflects the effects of the economy measures pursued during the period. Looking at these figures from the point of view of the long range trends, the standards of expenditure do not appear to have been affected to any appreciable extent even during the period of the deficits and economies. Prices coming

down during the preceding fifteen years ought to have had some effect on expenditure, and the real expenditure must have been more than that signified by the percentages. When correlated to the price-level, railway expenditure will be seen to represent a considerable rise. Earnings on the other hand dropped from 193 to 160 in 1932-3, but recovered to 171 in 1934-5 and to 180 in 1936-7. The figures indicate that working expenditure maintained a new and higher ratio than was noticed during the pre-war period.

It should be observed, however, that one cannot be too cautious in arriving at conclusions from an examination of the operating ratio. It is only at best a rough criterion of the financial success in management. A low percentage *per se* appears to denote an efficient and prudently managed administration, whereas a high percentage *per se* indicates expensive or wasteful management. It is well to bear in mind Eaton's description of the ratio as a convenient and quick summary of results; it merely shows the actual profits without giving any idea of the possible profit or the potential earning capacity of the system. Being a ratio between two variables, anything that affects either of them upsets the comparison. Final conclusions as to the meaning of the operating ratio cannot be stated until the effects of changes in freight or passenger rates, volume and character of traffic, rates of wages, working conditions, prices of materials, etc., have been ascertained. But other things being equal, the operating ratio is an index of the effectiveness of operation and the efficiency of management

NET EARNING POWER

We may now proceed to another test of railway performance, namely, comparison of the net earning power. Net earnings constitute the surplus income left after meeting working expenses. As the capital invested in Indian railways is mostly borrowed, interest charges are a fixed liability which has to be met from out of net earnings. Net earnings, therefore, indicate the financial strength of the railways from the point of view of the Government of India, and they are

usually stated as a percentage of the total capital outlay. The progressive figures of the capital at charge, net earnings and the ratio of the net earnings to capital are stated in Table 18.

TABLE 18. RAILWAY NET EARNINGS COMPARED TO CAPITAL-AT-CHARGE*
(ALL RAILWAYS)
(*Rs. in crores*)

Year	Capital-at-charge	Net earnings	Ratio of net earnings to capital
	Rs.	Rs.	
1900	329·53	16·45	4·99
1901	339·17	17·88	5·27
1902	349·77	17·22	4·92
1903	341·11†	18·90	5·54
1904	352·87	20·87	5·91
1905	358·52	21·75	6·07
1906	371·27	22·11	5·96
1907	391·87	22·98	5·86
1908	411·92	17·82	4·33
1909	429·83	20·68	4·81
1910	439·05	23·99	5·46
1911	450·07	26·44	5·87
1912	465·15	31·49	6·77
1913 1st Qr.	470·91	7·75	1·67
1913-4	495·09	30·66	6·19
1914-5	519·22	27·68	5·33
1915-6	529·98	31·74	5·99
1916-7	535·28	37·28	6·96
1917-8	541·80	42·00	7·75
1918-9	549·74	44·49	8·09
1919-20	566·38	38·50	6·80
1920-1	626·81	31·70	5·06
1921-2	647·97	22·09	3·41
1922-3	697·46	32·66	4·68
1923-4	717·93	39·35	5·48
1924-5	733·37	45·39	6·19
1925-6	754·32	42·30	5·61
1926-7	788·67	42·66	5·41
1927-8	822·86	45·66	5·55
1928-9	831·39	44·25	5·32
1929-30	856·75	40·60	4·74
1930-1	869·81	32·34	3·72
1931-2	876·34	28·11	3·21
1932-3	884·91	27·31	3·09
1933-4	884·41	30·04	3·40
1934-5	885·47	32·21	3·54
1935-6	879·57	32·90	3·74
1936-7	880·13	38·14	4·33

* Compiled from *Railways in India Administration Report*, Vol. II, 1905 for 1900-4, 1909 for 1905-9; 1914-5 for 1909—1914-5, 1919-20 for 1915-6—1920-1; the *Railway Board's Reports*, Vol. II, for the succeeding years.

† Decrease due to revision of capital outlay hitherto adopted for lines purchased by State from guaranteed railway companies.

During the first decade, starting from 1900, net earnings of Indian railways averaged 5·37 per cent. An increase was recorded in the succeeding decade ending 1919-20, and the net earnings rose to 6·52 per cent. During the four years, 1920-4, there was a decrease to 4·66 per cent, and recovery to an average of 5·47 per cent in the next six years till the commencement of the depression. For the first quarter of the century, 1900—1923-24, barring the effects of the compulsory reductions in expenditure during 1914-8 owing to the war, railways earned on an average 5·73 per cent on capital[4]; and, if we include the next six years, net earnings work out for the period, 1900 to 1929-30, at the rate of 5·68 per cent on the total capital.

It is interesting to compare these results with the trend of net earnings during the seven years of depression which followed. Average net earnings amounted to 3·58 per cent, representing a decline of two-fifths as compared with that of the first three decades of the present century. Including the depression years, the average for the period 1900 to 1936-7 amounts to 5·28 per cent. The record seems on the whole to indicate a satisfactory performance.

GAIN TO GOVERNMENT

A third test of the financial stability of Indian railways is to be found in the net gain to the Government of India from railways. The net gain constitutes the balance of net earnings left after meeting interest and other indirect charges, and forms the surplus available to the State from its railway investment. After the continued losses incurred by the State on railway account in the last century, the tide turned in favour of the State in 1900. The surplus to the State in that year amounted to only Rs. 11 lakhs, but it gradually increased to larger proportions. The gains or losses to the State since 1905 are shown in Table 19. Starting from 1905 the gain to the State averaged Rs. 2·39 crores a year in the first quin-

[4] Only 24 years.

quennium ended 1909. During the next two quinquennia, 1910 to 1914-5, and 1915-6 to 1919-20, the net gain increased to annual averages of Rs. 5·27 crores and Rs. 11·48 crores

TABLE 19. DIRECT GAIN OR LOSS TO THE STATE FROM RAILWAYS*

Year	*In lakhs of Rs*
1905	3,01
1906	3,46
1907	2,37
1908	1,86
1909	1,24
1910	3,01
1911	5,69
1912	7,22
1913-4	7,19
1914-5	3,23
1915-6	6,11
1916-7	11,22
1917-8	14,87
1918-9	15,85
1919-20	9,34
1920-1	5,64
1921-2	—9,27
1922-3	1,22
1923-4	6,44
1924-5	6,78
1925-6	5,49
1926-7	6,01
1927-8	6,28
1928-9	5,23
1929-30	6,12
1930-1	5,74
1931-2	..
1932-3	..
1933-4	..
1934-5	..
1935-6	..
1936-7	..

* The figures from 1905 to 1919-20 are taken from the *Railway Finance Committee Report*, 17 December 1921; the figures from 1920-1 to 1923-4 taken from the *Railway Board's Reports*. The figures from 1924-5 onwards, taken from the *Railway Board's Reports*, denote the contributions to the general revenues fixed in accordance with the resolution adopted in connexion with the separation of the Railway Budget from the General Budget. The contributions do not represent the net gain; they are only a part of it.

respectively. The substantial rates of gain had by 1919-20 become such a regular feature of the finances of the Government of India that the Financial Relations Committee assumed

a contribution from railway revenues to the State every year of no less than Rs.10¾ crores. The collapse of railway earnings in 1920-1 led to an increase of rates and fares and the imposition of a surcharge to secure the contribution to general revenues. In 1921-2 there was, as stated earlier, a deficit of over Rs. 9 crores and the position only improved to a small surplus in the next two years. The average net gain to the State during the four financial years, amounted to Rs. 1·01 crores—about one-eleventh of the average net gain during the previous quinquennium.

The gain to the State represents the residual profits after meeting the interest charges. With the Separation Convention, the annual payment to Government by the State-owned railways was, as referred to already, fixed on a different principle. It was limited to a contribution of one per cent of the capital at charge on the commercial lines *plus* one-fifth of any surplus, the balance being transferred to a reserve fund.[5] This fact must be kept in mind when comparing the contribution since 1924 with the payments to the State during the preceding years. The contribution to general revenues during the first six years following the Separation Convention —a period often referred to as one of great railway prosperity— amounted to an average of Rs. 5·99 crores. The balance, averaging Rs. 2·79 crores a year was transferred to the reserve fund. If we add these two figures we get a general idea of the amount of the net gain to the State which might have accrued but for the convention. On this computation, we get an average surplus of Rs. 8·78 crores for 1924-30. The actual surplus under the pre-separation system of accounting would have been greater, since the institution of the depreciation fund in 1924 created a new charge on current revenues, which was higher than that incurred before on account of renewals and replacements. During the period of the depression, a contribution of Rs. 5·74 crores was paid for the first year, 1930-1, only, and the contribution was suspended

with effect from the following year. Although the contribution according to the convention is a definite liability on future surpluses, the policy of Government appeared to treat it as if it did not exist. The average rate of gain spreading the contribution of 1930-1 over the seven years 1930-7, amounted to a little over four-fifths of a crore.

It should be stated here that the general survey attempted in the preceding paragraphs deals only with major trends. It needs, particularly during the post-separation period, to be qualified in the light of certain considerations to be taken up later. But the conclusions which emerge from the review of the financial results of Indian railways from the beginning of the present century, and which are not affected by other facts, may be summed up as follows :

(1) gross earnings of Indian railways have increased at a progressive rate ;

(2) working expenses have increased more in proportion than earnings ;

(3) gross receipts on the whole have been sufficient to meet all charges ; and,

(4) besides meeting interest charges, net earnings have left a substantial surplus as gain to the State.

FINANCIAL STATUS OF INDIAN RAILWAY SYSTEMS

In the brief survey just concluded, Indian railways were treated as a single system, and the financial results were expressed in totals, including all railways. One can hardly expect the performance of each railway to conform strictly to the average figures stated for all the systems. Railways which serve economically under-developed areas must, in the nature of things, be financially weaker than those running through more prosperous regions. It is, therefore, necessary to appraise the financial position of individual systems. Before proceeding to a detailed examination of State-owned railways after the separation of railway finance, a general review of the financial record of these systems

since 1900 may supply a useful background. For this purpose the principal Class I railways—owned by the State—and their predecessors prior to 1922 are examined. The railways have been arranged into two groups, state-managed and company-managed, for facility in comparing the financial record of those lines which since 1924 have passed from company to state management. The financial results of each railway are examined in the light of the three tests applied in the preceding paragraphs, namely, operating ratio, net earnings and gain to the State.

The operating ratio

The operating ratios of the principal Class I railways [6] exhibit a great diversity in operating results. The A.B. recorded a ratio up to 99, while the B.&N.W.—except during 1936-7—never exceeded 50. There are similar differences from railway to railway and from year to year. As it is difficult to grasp the significance of the annual figures for all the lines for a period exceeding thirty-five years, we may examine the quinquennial averages. The quinquennial averages for each railway, given in Table 20, indicate the trends of the operating ratios during 1900 to 1935.

Among the company-managed railways, the A.B. during the first quinquennium had an operating ratio of 85. This increased to 93 in the next period. During the next fifteen years, it varied from 76 to 78. It was only during 1925-30 that the ratio came down to 56. The B.&N.W. has, throughout this period, moved within a range of only 7 per cent from 40 to 46. The B.N. during the first twenty years deviated by only 1 per cent from the initial average of 50; but during the last fifteen years, the operating ratio increased to 66 and again to 76. The B.B.&C.I. recorded a similar increase during the post-war decade. In 1930-5 the ratio decreased from

[6] The statistics quoted in this section refer only to the main lines and do not include the lines worked by them, and comprised in each system. The statistics of the B. & N.W., a company railway not owned by the State are quoted to provide a contrast to the other two groups. The Tirhoot Railway, for which figures are given separately was, as mentioned earlier, State-owned but managed by the B.&N.W.

63 to 60 on the broad gauge and from 59 to 58 on the metre gauge. Both the M.&S.M. and S.I. indicate fairly stable averages which have throughout the period moved between 46 and 58, except during 1920-5 when there was an increase on these two lines to 62-3.

TABLE 20. QUINQUENNIAL AVERAGES OF OPERATING RATIOS *
(Class I Railways)

Railways	1900-4	1905-9	1910 to 1914-5	1915-6 to 1919-20	1920-1 to 1924-5	Average 1900-25	1925-6 to 1929-30	1930-1 to 1934-5
State-managed :								
Burma	58	62	59	50	63	58	59	76
E.B.	50	61	60	60	76	61	68	83
E.I.	35	40	39	38	60	42	61	65
O.&R.	50	63	50	46	69	56	..	..
G.I.P.	50	54	58	56	75	59	69	75
N.W.	52	61	60	53	80	61	73	81
Company-managed :								
A.B.	85	93	76	78	77	82	56	70
B.&N.W.	41	45	40	42	45	43	41	46
Tirhoot	..	44	39	41	46	43	40	46
B.N.	50	51	49	50	66	53	68	76
B.B.&C.I.(B.G.)	48	47	50	46	68	52	63	60
,, (M.G.)	..	54	51	48	64	54	59	58
M.&S.M.	..	..	56	50	62	56	54	57
S.I.	46	52	54	48	63	52	58	58
N.G.S.	47	43	51	54	45	48	42	55

* *Note.*—The quinquennial averages have been computed for the main system only, and exclude the figures of the worked lines. The statistics are taken from the *History of Indian Railways*, published by the Railway Board. It should be observed that the statistics relate to the calendar year for 1900-1912, and to the financial year thereafter. The averages for the Tirhoot and B.B.&C.I.(M.G.) are worked out on the basis of 20 years; and the average for the M.&S.M. of 15 years only. The E.I. includes since 1 July, 1925 the figures of the O.&R. The Burma became state-managed on 1 January 1929.

Turning to the state-managed railways, the Burma had an average which till 1930 varied between 50 and 63. But in the last period there was an increase to 76. The E.B. from an initial ratio of 50 during 1900-4, exceeded 60 in the second period, remaining at that level till 1920. During the next fifteen years there was a steep rise to 83. The E.I., the most important of all the lines in point of earnings, recorded a ratio of 35 in the first quinquennium and remained at or below 40 till 1920. The last three quinquennia witnessed a considerable increase by more than 50 per cent, and the average touched 65 in 1930-5. The figures of the O.&R., which was amalgamated with the E.I. in 1925 after State acquisition of the latter, are important as indicating that the

subsequent rise of the ratio on the combined E.I. system is not to be attributed to the merger alone. This is clear from the fact that during the years 1920-5, the E.I. had an operating ratio of 60 independently of the 69 of the O.&R. The G.I.P., which was company-managed till July 1925, remained well below 60 in the first four quinquennia and increased to 75 during 1930-5. The N.W., which had approximately the same record as the weaker lines till 1920, averaged 80 during 1920-5, and after a decrease to 73, rose again to more than 80 in the last period.

Taking the performance of each railway since 1900, the highest operating ratio averaged for the whole period is that of the A.B. Next in order are the N.W., E.B. and G.I.P. Only two railways, the B.&N.W. and E.I., had ratios well below 50. All the other systems had operating ratios ranging from 50 to 60. It will be seen from the averages for 1900-25 that the ratios of almost all the lines had gone up during 1925-35. The only exceptions were the B.&N.W. and Tirhoot, which maintained their lower levels during 1925-30, and the A.B., which showed an improvement over its past record. The comparatively lower operating ratios of the B.&N.W., the Tirhoot operated by it, and the N.G.S., company-managed till 1930, are in marked contrast to the ratios of the other lines.

Net earnings

The trend of net earnings, which, as mentioned earlier, may be taken to indicate the profit earning capacity of the different railways, may be seen from the percentages of net earnings to capital at charge given in Table 21. The financially stronger systems in the groups, namely, those which had been steadily yielding a rate of net earnings exceeding 5 per cent during the first quarter of the present century, are readily singled out. The B.&N.W., it may be seen, produced a high rate of net earnings throughout, and this applies to the Tirhoot section as well. The B.B.&C.I. showed an equally good record. In fact, the metre gauge section of this railway

touched the highest percentage of 11·09 per cent during the war period. The M.&S.M. and S.I. came next. The E.I. was earning a net income exceeding 8 per cent till 1920, and this came down to 5·65 per cent in 1925-30, and to just under 4·5 per cent in 1930-5. The record of the G.I.P. was satisfactory till 1920, but in the last three quinquennia the net earnings decreased to 3·77, 4 and 2·5 per cent respectively. All the remaining railways, the E.B. and N.W., state-managed throughout, and, in the earlier half of the period, the Burma, yielded less, and in certain cases, much less, than 5 per cent. The lowest has been that presented by the A.B. In the first two quinquennia net earnings stood between 0·3 and 0·24 per cent, and in the next the percentage increased to 1·5. There has since been an improvement to 3·9 and 2·2 per cent respectively in the last two periods. The average for the first quarter of the century works out to 0·8 per cent.

TABLE 21. QUINQUENNIAL AVERAGES OF PERCENTAGE NET RETURN ON CAPITAL *

(Class I Railways)

Railways	1900-4	1905-9	1910 to 1914-5	1915-6 to 1919-20	1920-1 to 1924-5	Average of 1900-25	1925-6 to 1929-30	1930-1 to 1934-5
State-managed :								
Burma	4·33	4·38	4·93	6·22	6·67	5·31	7·28	2·56
E.B.	6·25	4·53	4·42	4·16	2·99	4·47	4·82	1·78
E.I.	9·73	8·42	9·11	10·13	6·46	8·77	5·65	4·42
O.&R.	4·89	3·72	5·38	7·12	4·16	5·05	..	..
G.I.P.	7·28	6·74	5·96	6·72	3·77	6·09	4·09	2·53
N.W.	4·09	3·97	4·28	5·90	2·96	4·24	3·52	1·94
Company-managed :								
A.B.	0·30	0·24	1·00	1·00	1·50	0·81	3·93	2·22
B.&N.W.	5·96	5·76	6.80	7·80	9·60	7·18	10·42	7·45
Tirhoot	5·04	5·53	6·95	7·16	8·02	6·54	10·57	7·74
B.N.	3·36	4·41	5·13	6·57	4·39	4·77	4·05	2·44
B.B.&C.I.(B.G.)	7·06	8·35	7·79	9·64	5·29	7·63	4·87	4·64
,, (M.G.)	..	7·07	8·50	11·09	9·18	8·96	10·07	8·55
M.&S.M.	..	..	4·83	7·53	5·83	6·06	7·75	5·71
S.I.	7·29	6·99	6·85	9·56	7·61	7·66	7·94	5·14
N.G.S.	5·14	6·13	6·04	5·87	8·75	6·39	8·84	6·57

* See Note to Table 20.

The figures quoted above not only disclose the trend of financial results, but offer certain other indications as well. The increase of net earnings attributable to larger receipts, the enforced curtailment of expenditure on repairs and maintenance, etc., during and immediately after the war, is borne out by the averages for the quinquennium on all

railways. The only exception to this was the A.B. Secondly, the ideas held about the extent of prosperity enjoyed during 1925-30 do not seem to be justified, particularly on the state-managed railways. The A.B., B.&N.W., M.&S.M. and Burma show increases during the period. But the B.N., B.B.&C.I. and S.I. had certainly enjoyed equally and even higher levels of net earnings in the earlier quinquennia. The position on the E.B., E.I., G.I.P. and N.W. seems to have worsened materially during the post-war decade. It is significant that the general decrease during 1930-5 was greater on state-managed than company-managed lines.

Net gain or loss to State

The final test of gain or loss to the State on the working of its own railways discloses profitable investment on certain systems throughout the period under review. The quinquennial averages of gain or loss to the State, given in Table 22, indicate that the B.B.&C.I., S.I. and E.I. represent

TABLE 22. QUINQUENNIAL AVERAGES OF GAIN OR LOSS TO STATE *
(Class I Railways)
(*In lakhs of rupees*)

Railways	1900-4	1905-9	1910 to 1914-5	1915-6 to 1919-20	1920-1 to 1924-5	Average of 1900-25	1925-6 to 1929-30	1930-1 to 1934-5
State-managed :								
Burma	7	11	17	32	42	22	62	— 59
E.B.	21	9	19	10	— 30	6	46	— 75
E.I.	1,56	1,40	2,21	3,32	2,12	2,12	2,51	21
O.&R.	1	— 13	23	64	10	17	..	..
G.I.P.	24	— 30	— 4	86	— 23	11	70	—1,52
N.W.	— 29	— 15	31	1,64	—1,04	9	— 49	—3,35
Company-managed :								
A.B.	— 35	— 39	— 32	— 38	— 37	— 36	4	— 41
B.N.	— 5	20	50	1,02	10	35	— 31	—1,63
B.B.&C.I.(B.G.)	— 3	29	50	1,19	60	51	58	37
,, (M.G.)	..	63	73	1,33	1,08	94	1,34	1,05
M.&S.M.	..	..	— 37	26	23	4	1,07	30
S.I.	15	29	54	1,08	88	59	1,10	41

* See Note to Table 20.

this group. On certain other lines, such as the Burma, and M.&S.M., the profits were on the whole greater than the losses. The B.N., which was a paying line till 1925, became a liability thereafter. The G.I.P. and N.W. brought losses to the State except for two quinquennia.

If we exclude the depression period, the position may be stated thus: the losses on the G.I.P. varied from Rs. 4 lakhs to Rs. 30 lakhs. The heaviest loss to Government is found on the N.W. on which an annual loss of Rs. 104 lakhs had to be met during 1920-5 and Rs. 49 lakhs during 1925-30. This is largely because of the strategic section which forms part of the N.W. But for unrelieved deficit, the A.B. holds the record. During the first quarter of the century till 31 March 1925, the A.B. was subsidized by the taxpayer to the extent of Rs. 36 lakhs a year. There can be no doubt that the mainstay of railway finance during the period under review was the financial stability of the B.N., B.B.&C.I., E.I. and S.I. Railways. The surplus revenues of these lines have been indirectly financing the deficits of the other railway systems.

Taking the average gain or loss for 1900-25, it will be noticed that all the lines with the exception of the A.B. produced a net gain to Government. The gain varied from an average of Rs. 6 lakhs on the E.B. to Rs. 212 lakhs on the E.I., and after meeting the loss on the A.B. there was still a substantial amount left for payment to Government. The position improved during the pre-depression quinquennium, and only worsened after 1931 on account of the depression.

The financial results of the individual railways thus confirm the conclusion reached earlier: that Indian railways present on the whole a satisfactory record over a comparatively long period, 1900-30. The foregoing analysis raises several important questions. The financial position of certain systems deteriorated during the post-war decade. The lines acquired by the State for direct operation appear to have been more susceptible to losses than those which continued to operate under company management. If the causes connected with this result are related to the policy of improving service and facilities and giving the public better value for their money there is no cause for complaint. The loss in the direct gain to the State is in that case counterbalanced by increased comfort for passengers, lower fares and freight rates, and better

service all round. If, on the other hand, they are connected with the policy of state management, the public need to be instructed about it, and proper correctives applied. The answers to these questions must await a closer study of the finances and operation of the State-owned railways. The examination of the former is undertaken in the following pages. The latter is dealt with in the succeeding chapters.

THE FINANCIAL STATUS OF STATE-OWNED RAILWAYS UNDER THE CONVENTION

The general trends of Indian railway finance were indicated in the preceding pages as disclosed by the financial results of working during the first thirty-five years of the present century. The financial record of the post-separation period ended 31 March 1930 was viewed in perspective, that is to say, in the light of the tendencies in evidence during the previous twenty-five years. We may now turn to the financial results of the State-owned railways after 1924. The State-owned railways represent almost entirely the Class I railways, the only systems excluded being the Bengal & North Western, Rohilkund & Kumaon, and Nizam's Guaranteed State Railways.

It should be stated here that the statistics of the pre-separation and post-separation periods, though sufficiently accurate for the broad conclusions reached earlier, are not strictly comparable. Certain changes and refinements in railway accounting and classification introduced after 1924 have altered the significance of the terms used. Two new concepts were introduced in 1924 as a result of the institution of the depreciation fund and the contribution under the terms of the Separation Convention. Formerly, under the head 'program revenue,' expenditure was incurred for renewals and replacement, but this was entirely different from a proper depreciation fund established on the bases of estimated lives and calculated wear and tear of different units of wasting assets. With the institution of the fund, depreciation charges automatically became a constant item of railway expenditure

irrespective of whether expenditure was incurred for replacement or renewal of assets, whereas formerly only that amount was entered in the accounts which was spent during that year on renewals or replacements. Thus the depreciation charges in 1924-5 amounted to Rs. 10·35 crores, but in fact only Rs. 7·29 crores were spent towards renewals and replacements, the balance being left to accumulate in the fund. Under the original system, that balance would have formed part of the surplus, thus increasing the net gain to Government. The result of the institution of the depreciation fund, therefore, has been to increase the fixed charges on the expenditure side. This principle was not extended to company-managed railways, which continued to be worked according to their contracts and the older procedure, as it was found that it would not be to the advantage of the State.[7]

The contribution to general revenues has been referred to already. The formula applied to ascertain the contribution makes it clear that the entire balance left after meeting railway expenditure was not to be appropriated by the State. Another result of the Separation Convention was that the losses on the strategic railways were transferred to the State, and the procedure adopted was to deduct the losses on these lines from the contribution due according to the formula laid down.

A radical change was also effected under the head of interest. The price of certain railways purchased by Government was agreed to be repaid by means of annuities, which naturally included elements both of principal and interest. The whole of these annuities had previously been debited to revenue under the head 'interest.' But with effect from 1924 the element of interest was taken as a charge against general revenues and not against railway revenues. The result of all these changes was to alter the meaning and significance of the terms used after the separation. The procedure followed after 1924 will be better understood if attention is paid to the elements entering into the computation of the net traffic

[7] Chapter VIII *infra*.

receipts, net revenue, surplus and net surplus. They are briefly summarized as follows :

Net traffic receipts=gross traffic receipts — [operating expenses+depreciation+payments to the worked lines]

Net revenue=net traffic receipts+[net miscellaneous receipts — miscellaneous charges and surplus profits payable to companies]

Surplus=net revenue—interest charges

Net surplus (transferred to reserve fund)=surplus—contribution to general revenues.

It should be understood that these terms are used in the following pages in the sense indicated above.

The financial condition of State-owned railways improved considerably after the collapse of earnings between 1920 and 1924. The changes in the accounting procedure render the presentation of comparable figures difficult. The performance of State-owned railways after 1924 will, therefore, have to be examined independently by itself from the results of working during the post-separation years.[8] The widely divergent characteristics of the pre-depression and the depression years justify separate treatment of each period.

TREND OF THE OPERATING RATIO

The trend of the operating ratio on all State-owned railways (commercial and strategic) is indicated in Table 23. The total gross traffic receipts, which stood in 1924-5 at Rs. 100 crores, declined in the next two years to Rs. 99 crores and Rs. 98 crores, after which earnings increased to Rs. 103 crores. Traffic receipts, which remained at that level till March 1929, declined by a crore during 1929-30. Operating expenditure in 1924-5 amounted to Rs. 51·65 crores ; it increased to about Rs. 53 crores in the following year and remained about that level

[8] The statistics of the company-managed lines for purposes of comparison have been recast on the basis of the State railway practice, and this should be kept in mind while examining the figures and averages in Table 23.

till 1927-8. There was an increase of 7·6 per cent. in the next two years over the 1924-5 level from Rs. 53·06 to Rs. 55·59 crores. These features are reflected in the operating ratios.

TABLE 23. FINANCIAL RESULTS OF WORKING THE STATE-OWNED RAILWAYS*

(COMMERCIAL AND STRATEGIC LINES COMBINED EXC. WORKED LINES)

(*Rs. in crores*)

Year	Gross traffic receipts	Operating expenses	Depr. fund	Operating ratio inc. depreciation†	Operating ratio exc. depreciation†	Total working exp're.	Ratio of net receipts to capital	Contribution	Railway reserve fund
	Rs.	Rs.	Rs.			Rs.	%	Rs.	Rs.
1924-5	100·13	51·65	10·35	51·6	61·9	62·00	6·0	6·78	6·38
1925-6	98·94	52·99	10·67	53·6	64·3	63·66	5·4	5·49	3·79
1926-7	98·42	52·89	10·89	53·7	64·8	63·78	5·1	6·01	1·49
1927-8	103·43	53·06	11·38	51·3	62·3	64·44	5·5	6·28	4·57
1928-9	103·73	54·22	12·00	52·3	63·8	66·22	5·1	5·23	2·58
1929-30	102·70	55·59	12·59	54·1	66·4	68·18	4·5	6·12	—2·08
Average 1924-30	101·22	53·40	11·31	52·8	63·9	64·71	5·3	5·99	2·79
1930-1	95·10	54·39	13·07	57·2	70·9	67·46	3·5	5·74	—10·93
1931-2	86·63	49·31	13·46	56·9	72·5	62·77	3·0	S	—4·95
1932-3	84·43	49·08	13·77	56·7	73·0	62·85	2·7	S	..
1933-4	86·63	49·50	13·56	55·8	71·4	63·06	3·0	S	..
1934-5	90·20	50·27	13·72	54·7	69·9	63·99	3·3	S	..
1935-6	90·65	50·87	13·26	54·9	69·5	64·12	3·4	S	..
1936-7	95·49	50·23	13·17	51·4	65·2	63·38	4·2	S	..
Average 1930-7	89·88	50·52	13·43	55·4	70·3	63·95	3·3	..	..

* The figures are taken from the statistics given in the *Explanatory Memorandum to Railway Budget* and *Railway Board's Report* 1936-7, Vol. I.

† The figures of operating expenses are affected by the inclusion of the credits from released materials which were up to 1931-2 taken in reduction of operating expenses. The procedure has changed since, and for proper comparison the ratios have been computed as if the same procedure had been continued. The amounts involved are Rs. 119 lakhs in 1932-3 and 1933-4, Rs. 90 lakhs in 1934-5 and Rs. 110 lakhs in 1935-6. During these years these amounts were added to receipts, and during 1936-7 the credits were taken in reduction of the depreciation fund. It should also be noted that working expenses were reduced by Rs. 166 lakhs in 1930-1 by a credit from the depreciation fund for correction of past accounting adjustments, and in 1924-5 by Rs. 179 lakhs by certain abnormal refunds of expenditure in previous years. See *Railway Board's Report* 1936-7, Vol. I, p. 17.

S. Suspended.

The operating ratios of State-owned railways are shown in two separate columns. The first column, indicated as excluding depreciation, presents the ratio of ordinary working expenses to gross earnings. In the second column the operating ratios are computed taking total working expenses, which include depreciation. The annual appropriation on account of depreciation is also given for each year in the table.

The operating ratio, excluding depreciation, on all State-owned railways stood at 51·6 in 1924-5, and increased to 54

during 1925-7. There was a decrease in the next two years, due to increased receipts. In 1929-30 the ratio again reached 54. The operating ratio, including depreciation, for 1924-5 was 62 and showed the same trends as the ratio excluding depreciation, recording an increase during 1925-7, a decrease during 1927-9, and finally an increase in 1929-30. The average ratio for the six years was 52·8 excluding depreciation and 63·9 including depreciation.

NET RECEIPTS AND CONTRIBUTION

The ratio of net traffic receipts to capital at charge was 6·0 in 1924-5, the highest touched during the post-separation period. There was a tendency thereafter towards a decrease in the average percentage of the net traffic receipts to capital except for an interruption in 1927-8 due to additional receipts. The gradual decline reflects the effects of the policy of capital expenditure and the consequent increase in the capital at charge. The net traffic receipts dropped to 5·1 per cent first, and then to 4·5 per cent in 1929-30. The average for the six years ended 31 March 1930 was only 5·3 per cent. This average return, it will be noticed, was less than the 5·5 per cent average net receipts which the Indian Retrenchment Committee considered State-owned railways ought to earn on the capital at charge invested by the State.

The gain to the State, as stated earlier, was stabilized under the convention in the form of a contribution to general revenues. During the pre-depression period profits to the State were in the aggregate regular and substantial. The largest contribution for the entire period was that paid in the year of separation itself, and amounted to Rs. 6·78 crores. In the succeeding year it declined to Rs. 5·49 crores and increased to over Rs. 6 crores in 1926-8. The contribution was down by a crore in 1928-9, but it rose again to more than Rs. 6 crores in 1929-30. The average contribution for the whole period worked out at the rate of Rs. 5·99 crores a year. Although the gain in the shape of the contribution to the

central exchequer does not appear to be high when compared with the standards of return prior to 1920 or the Meston figure of Rs. $10\frac{3}{4}$ crores, the surpluses computed on the pre-separation practice were by no means lower. Account must be taken of the net surpluses transferred to the railway reserve fund, which represents roughly the limit set by Government itself to its appropriations of the profits from railways. The net surpluses transferred to the reserve varied from year to year, but the largest credit was in the first year itself, amounting to Rs. 6·38 crores. In the next two years, the net surplus decreased to one-half and one-quarter of this amount respectively, but thanks to the improved revenue position during 1927-9, the accretions to the reserve recovered to Rs. 4·57 crores and Rs. 2·58 crores respectively during the two years. The year 1928-9 was the last one in which the railways had any surplus. In 1929-30, net revenue was insufficient to meet the contribution and the deficiency of Rs. 2·08 crores was met by drawing on the fund. Payments into the fund during the five years ended 31 March 1929 totalled Rs. 18·81 crores and, averaged over the entire pre-depression period, worked out at the rate of Rs. 2·79 crores per annum.

The performance of State-owned railways during the first six years after the separation of railway finance seems to have been generally satisfactory. As the principles of railway finance were somewhat altered under the convention, it may be helpful to visualize the position during the period had the earlier practice prevailed. The railways paid into the depreciation fund, which represented a new element in railway accounts, Rs. 67·88 crores, of which they spent on renewals and replacements of wasted assets Rs. 55·64 crores, leaving a balance of Rs. 12·24 crores. Under the older practice, the unspent balances in the depreciation fund would have been appropriated as part of the gain to the State. If we add to this the accumulations in the reserve fund amounting at the end of 1929-30 to Rs. 16·73 crores, the total surplus would have been Rs. 64·88 crores, or an average annual surplus of Rs. 10·81 crores during the first six years after the separation.

This comes up to the level of the Meston Committee's estimate of the income from railways to the State. The comparison serves to indicate that the prosperity of the post-separation years was exaggerated and that the surpluses of State-owned railways were not much above the level of profits earned before 1920. The only qualification that may be made to this statement is that the existence of the depreciation fund may have led to a higher scale of expenditure on renewals and replacements than that of earlier years.[9]

RAILWAY FINANCE DURING THE DEPRESSION

The impact of the depression was experienced in 1930-1. In fact, even in 1929-30 itself, gross earnings had declined by over a crore as compared with the previous year. But Indian railways were not prepared for the suddenness with which the great depression set in. Introducing the budget for 1930-1, the Railway Board budgeted for the commercial and strategic lines (including worked lines) gross receipts amounting to Rs. 107·75 crores. Before the year had advanced, it was realized that it was impossible to obtain the estimated amount of earnings, and the revised estimates scaled these down by almost 12 per cent, namely to Rs. 95 crores. The actuals amounted to Rs. 95·10 crores. In view of such serious deterioration in receipts, the gravity of the position was recognized early in 1931 and this fact is reflected in the budget estimates for 1931-2. Introducing the budget in the Assembly in February 1931, Sir George Rainy referred to the necessity of promoting economy and bringing about a reduction of expenditure, and stated: 'We feel that at this juncture our primary duty is to stop up the hundreds of loopholes through which money is apt to leak away in times of prosperity, and we hope that the reduction of expenditure will come not from half-a-dozen large items but from an immense accumulation

[9] This may imply either that the expenditure incurred in previous years was less than necessary or that the post-separation expenditure was more than necessary. The difference between what ought to have been spent and what was spent may indicate the extent of 'prosperity' in the post-separation period.

of small items, the aggregate of which may be very substantial.'[10] In the Explanatory Memorandum, the Chief and the Financial Commissioners, Railways, instanced certain measures of economy which had already reduced the expenditure for 1930-1. 'The main directions in which economies have been initiated during the current year are in repairs and maintenance of track services, buildings, residential quarters and station machinery; but care has been taken to see that, while no expenditure should be incurred on non-essentials, the standard of maintenance necessary to secure the safe passage of trains should not be lowered and railway property should not be allowed to deteriorate.'[11] Turning to the budget year, 1931-2, the Commissioners of the Railway Board drew attention to the additional expenditure on account of increased staff necessitated by the employment regulations, and the additional track of 900 miles to be opened that year. The principal measures of economy they proposed were to reduce working costs; to scrutinize the scale of establishment, particularly temporary establishment; to reduce the strength of the permanent-way gangs particularly on the branch lines and sidings; to economise the use of materials and cut down the number of ballast trains; to decrease, without depreciation in the value of the property, the cost of maintaining and repairing structures and buildings and use cheaper materials. 'In fact,' they added, 'by lowering the previous standard of maintenance where this can be done without prejudice to safety or any real harm to the property, we aim at saving over a crore in the cost of repairing and maintaining way and works compared with the expenditure in 1929-30.'[12] There was expected to be a saving of Rs. 70 lakhs also on the repairs and maintenance of rolling stock in 1931-2. The Commissioners further proposed a less frequent overhaul of wagons and other rolling stock, but they did not anticipate much economy from staff.

[10] Railway Budget Speech 1931-2, p. 5.
[11] *Explanatory Memorandum to Railway Budget* 1931-2, p. 5.
[12] Ibid, p. 9.

The railways expected an increase in the gross revenues[13] during 1931-2 despite these economy measures, from Rs. 95 crores during 1930-1 to Rs. 101 crores. The actual results proved that the estimate exaggerated the earnings by 14 per cent and the gross revenues amounted to only Rs. 86·63 crores. After the railway and the general budgets were passed by the Central Legislature, the financial situation became exceedingly gloomy. The Government of India set up a Retrenchment Advisory Committee of the Legislature with a number of sub-committees to enquire into the possibilities of economy in the different departments of Government. One of these sub-committees dealt with the finances of Indian railways and published their report in October 1931. The findings and detailed recommendations will be referred to later, but mention may be made here of the savings proposed, amounting to Rs. 7·8 crores per annum, of which no less than Rs. 4·8 crores had already been carried out by the Railway Board and railway administrations. These savings were mainly effected by the abolition of some posts, reduction of office staff, economies in office contingencies, publicity expenses, allowances, etc. The largest item was the reduction in the cost of repairs and maintenance through partial postponement and use of cheaper materials.

The effects of the depression may be read from the gross earnings of railways since 1930-1. Earnings steadily dropped during the first two years and in 1932-3 the nadir of railway income was touched at the level of Rs. 84·43 crores. There was a slight improvement to Rs. 86·63 and Rs. 90·20 crores respectively in the next two years. The average for the whole period, 1930-7, amounted to only Rs. 89·88 crores as against Rs. 101·22 crores for the pre-depression period. Working expenses, thanks to the economy measures, were also reduced to an annual average of Rs. 50·52 crores, which represented a decrease of over Rs. 3 crores per annum. The decline in traffic receipts was greater than the reduction in working

[13] See Table 23.

expenses, and the operating ratio for all State-owned railways, excluding depreciation, increased to 57·2 in 1930-1 and gradually dropped to 54·7 in 1934-5 and 51·4 in 1936-7. The average ratio for the whole period was 55·4 as against 52·8 during 1924-30. Including depreciation, the operating ratio exhibited a different movement: from 66·4 in 1929-30 it increased to 70·9 and 72·5 in the first two years. In 1931-2 the highest point was touched during the eleven years after the separation, namely at 73·0. The improvement in earnings was reflected in a reduction of the ratio during 1933-5. The average for the whole period was 70·3 as compared with 63·9 for the pre-depression period. It will be observed that the increase denoted by the operating ratios, including depreciation, amounted to 6·4, while that shown by the ratios, excluding depreciation, was only 2·6. The extent of deterioration shown by the former is evidently greater. During the last two years, 1935-7, the ratio came down to 65·2.

With such tendencies as regards gross earnings and working expenses, it was inevitable that net receipts and the percentage of net receipts to capital at charge should record a corresponding decline. The ratio of net receipts to capital at charge declined from 4·5 per cent in 1929-30 to 3·5 per cent in 1930-1. In the next three years it was further reduced to about 3 per cent. Only during 1934-5 was there a slight improvement, which continued during the succeeding two years reaching at the end of March 1937, an average return of 4·2 per cent.

The contribution to Government, as shown in Table 23, was paid only in the first year, 1930-1. We have already observed that the contribution for 1929-30 itself could be paid only after withdrawing from the reserve fund Rs. 2·08 crores. In 1930-1 an amount of Rs. 10·93 crores was withdrawn to meet the payment of the contribution. In the succeeding year, net receipts proved insufficient to pay even the interest charges. The reserve fund had a balance of only Rs. 4·95 crores and this was utilized to the full, and to cover

the remaining portion of the interest charges, a temporary loan of Rs. 4·25 crores was taken from the depreciation fund. From 1932-3 onwards, as the reserve fund was depleted, the deficiency of net earnings to meet interest charges was met by further withdrawals from the depreciation fund. Some idea of the manner in which the railway deficits were covered will be clear from the following table :

TABLE 24. NET REVENUE, INTEREST CHARGES AND DEFICITS OF INDIA STATE-OWNED RAILWAYS DURING 1930-7

(In crores of rupees)

Year	Net revenue	Interest charges	Contribution	Deficit	Reserve fund	Loans from depr'n. fund
1930-1	27·53	32·72	5·74	— 5·19	—10·93	..
1931-2	23·87	33·07	5·36	— 9·20	— 4·95	4·25
1932-3	22·68	32·91	5·23	—10·23	..	10·23
1933-4	24·62	32·58	5·21	— 7·96	..	7·96
1934-5	26·74	31·80	5·04	— 5·06	..	5·06
1935-6	27·40	31·39	4·99	— 3·99	..	3·99
1936-7	32·02	30·81	4·91	1·21	..	— 1·21

The State, therefore, received only Rs. 5·74 crores during the whole period, or an average of Rs. 0·82 crore a year if we distribute that amount over the seven years ended 1937. But according to the convention, the contributions, which were suspended from 1931-2, constituted a liability to be redeemed out of future surpluses. The contributions due but not paid amounted to Rs. 30·74 crores at the end of 1936-7. The real deficit on the working of the railways was, therefore, very much more if we also include the suspended contributions. If we take this into account the deficit position was as indicated in the following table :

TABLE 25. TOTAL DEFICITS ON STATE-OWNED RAILWAYS

(In crores of rupees)

Year	Interest	Contribution	Total	Net revenue	Reserve fund	Total Deficit
1931-2	33·07	5·36	38·43	23·87	—4·95	9·61
1932-3	32·91	5·23	38·14	22·68	..	15·46
1933-4	32·58	5·21	37·79	24·62	..	13·17
1934-5	31·80	5·04	36·84	26·74	..	10·10
1935-6	31·39	4·99	36·38	27·40	..	8·68
1936-7	30·81	4·91	35·72	32·02	..	3·70

It was only the liability on account of interest charges not covered by net revenue which was met by the temporary loans from the depreciation fund. These loans by the end of March 1937 amounted to Rs. 30·28 crores. Including the suspended contributions the total liability amounted to more than Rs. 61·00 crores for the six years 1931-7, or an average real deficit of over Rs. 10 crores a year, a result which indicates the very serious state of financial deterioration on all State-owned railways.

FINANCIAL RESULTS OF PRINCIPAL STATE-OWNED RAILWAYS

We may now turn to consider the finances of the principal State-owned railways. The general condition of individual systems may be indicated by considering the average results for the six pre-depression and the six depression years.

The average gross traffic receipts for the period 1924-30, stated in Table 26,[14] show an increase on six of the railways as compared with the year 1924-5. The four railways on which the averages were lower than the basic level were the E.I., G.I.P., N.W.(Com.) and B.B.&C.I., but this is partly to be attributed to the fact that they had exceptionally larger incomes in that year.

TABLE 26. GROSS TRAFFIC RECEIPTS

(*Rs. in crores*)

	1924-5	Average 1924-30	Average 1930-6	Per cent of 1924-30
State-managed :				
	Rs.	Rs.	Rs.	
Burma	4·29	4·78	3·71	78
E.B.	5·92	6·62	5·26	79
E.I.	20·61	20·10	17·97	89
G.I.P.	15·16	14·91	12·33	83
N.W.(Com.)	15·13	14·40	13·72	95
N.W.(Str.)	1·60	1·60	1·29	81
Company-managed :				
A.B.	1·44	1·83	1·73	95
B.N.	8·38	8·76	7·72	88
B.B.&C.I.	12·33	11·74	10·69	91
M.&S.M.	7·91	8·50	6·98	82
S.I.	5·15	5·64	5·33	95

[14] The figures for the Tables 26 to 32 are worked out taking the actuals for each year published in the Railway Budget papers for 1924-37.

The effects of the depression on railway income are reflected in the average traffic receipts for 1930-6. All the systems without exception suffered substantial decreases in their receipts as compared with the pre-depression period. The largest decrease amounting to more than 20 per cent was on the Burma and E.B. The E.I. and B.B.&C.I., financially the most important of all railways, had average decreases amounting to 11 and 9 per cent respectively. Those which had the least reduction in earnings during the depression years were the N.W.(Com.), A.B. and S.I., on which the decrease was 5 per cent. The other railways had traffic receipts lowered by 12 to 18 per cent.

Ordinary working expenses as we have seen, increased steadily during 1924-30. The average operating expenditure of the different railways showed also an increase during the period. Only the average of the E.I. was lower than the figure for 1924-5. The effects of economies and retrenchments during the depression period are to be seen in the average for 1930-6. Judged from the standards of expenditure of the previous six years, there was a decrease on seven systems. Those on which a further rise in operating expenses occurred were the N.W.(Com.), A.B., B.N. and S.I. The average increase on the A.B. was 17 per

TABLE 27. ORDINARY WORKING EXPENSES

(*Rs. in crores*)

State-managed :	1924-5	Average 1924-30	Average 1930-6	Per cent of 1924-30
	Rs.	Rs.	Rs.	
Burma	2·18	2·45	2·28	93
E.B.	3·47	3·73	3·46	93
E.I.	10·54	10·11	9·34	92
G.I.P.	8·05	8·47	7·30	86
N.W.(Com.)	7·46	7·77	7·90	102
N.W.(Str.)	1·56	1·56	1·50	96
Company-managed :				
A.B.	0·82	0·94	1·10	117
B.N.	4·73	4·94	5·06	102
B.B.&C.I.	5·91	6·03	5·35	89
M.&S.M.	3·63	3·89	3·47	89
S.I.	2·60	2·64	2·73	103

cent, while on the others it varied by 2-3 per cent only. The G.I.P. had the largest decrease of 14 per cent and the B.B.&C.I. and M.&S.M. came next with a decrease of 11 per cent. It is interesting to note that the B.B.&C.I. was the only railway on which the decrease in operating expenses was greater than that in earnings. Thus, while gross receipts declined to 91 per cent, ordinary working expenses decreased to 89 per cent.

Taking depreciation charges into account, total working expenses on different railways are stated in Table 28. The

TABLE 28. TOTAL WORKING EXPENSES

(*Rs. in crores*)

State-managed :	1924-5	Average 1924-30	Average 1930-6	Per cent of 1924-30
	Rs.	Rs.	Rs.	
Burma	2·60	2·90	2·82	97
E.B.	4·19	4·52	4·40	97
E.I.	12·55	12·17	11·70	96
G.I.P.	9·40	10·04	9·27	92
N.W.(Com.)	9·18	9·68	10·16	105
N.W.(Str.)	1·96	1·94	1·96	101
Company-managed :				
A.B.	1·06	1·19	1·43	120
B.N.	5·76	6·08	6·41	105
B.B. & C.I.	6·98	7·23	6·71	93
M. & S.M.	4·34	4·70	4·37	93
S.I.	3·07	3·18	3·48	109

six-year averages under this head indicate that the reduction in expenditure during the depression was less than that indicated by the averages of ordinary working expenditure. The four systems on which operating expenses had increased as compared with 1924-30, showed a greater rise in total working expenses. Thus, the increase in total working expenses on the A.B. became 20 per cent against an increase of 17 per cent in ordinary working expenses. The average expenditure on other lines, expressed as a percentage of their averages for 1924-30, was also higher. The inclusion of depreciation has, therefore, had the effect of worsening the relative financial position of the railways.

The effects of the changes in gross traffic receipts and working expenses on the financial position of each railway are expressed in the operating ratio. The decrease in earnings unaccompanied by a proportionate decrease in expenditure forced up the operating ratios of all the railways. The average ratios for the two six-year periods excluding and including depreciation are given in Table 29. Taking the ratios excluding depreciation, it will be seen that the B.B.&C.I. had a decrease while the E.I. showed as low an increase as two per cent during 1930-6. The Burma, A.B. and B.N. had a rise of 10 per cent or more. On the remaining lines the operating ratio increased by 2 to 9 per cent.

TABLE 29. OPERATING RATIOS

	Exc. depreciation		Inc. depreciation	
	Average 1924-30	Average 1930-6	Average 1924-30	Average 1930-6
State-managed :				
Burma	51	62	61	77
E.B.	56	65	68	83
E.I.	50	52	61	65
G.I.P.	57	59	67	75
N.W.(Com.)	54	58	67	74
N.W.(Str.)	98	116	121	152
Company-managed :				
A.B.	51	64	65	83
B.N.	56	66	69	83
B.B.&C.I.	51	50	62	63
M.&S.M.	46	50	55	63
S.I.	47	51	56	65

The ratios including depreciation indicate that the financial deterioration was in fact greater. The B.B.&C.I. and E.I. had a slightly larger increase in their ratios and on four railways, namely, the Burma, E.B., A.B. and B.N., the averages for 1930-6 increased by about 15 per cent or more.

We may now examine the trend of net receipts. There was a substantial increase in the net receipts of six railways during 1924-30, as shown by the averages which were higher than the figures for 1924-5. On the E.I., G.I.P., N.W. and B.B.&C.I. larger net receipts were realized. On these systems, which represented the more paying lines, the

averages for the depression period showed a considerable decline. Net earnings on the Burma and E.B. among the state-managed railways were more than halved as compared with the pre-depression period. On the G.I.P. the reduction was over a third. The E.I. and N.W.(Com.) fared comparatively better as the decrease was limited to 21 per cent on the former and 25 per cent on the latter.

The position of company-managed railways during the depression period was on the whole slightly better. The A.B. and B.N. had average net receipts to the extent of less than half their pre-depression averages. The other three systems showed less deterioration. The M.&S.M. had a decrease of 31 per cent and the S.I. one of 25 per cent. The B.B.&C.I. had the lowest decrease as compared with the pre-depression period.

TABLE 30. NET RECEIPTS AND THEIR RATIO TO CAPITAL

(Rs. in lakhs)

	Net receipts			Percentage to Capital at charge		
	Average 1924-30 Rs.	Average 1930-6 Rs.	% of 1924-30	1924-30	1930-6	% of 1924-30
State-managed :						
Burma	1,88	89	47	6.1	2.5	41
E.B.	2,10	87	41	4.5	1.8	40
E.I.	7,93	6,27	79	5.8	4.4	76
G.I.P.	4,87	3,06	63	4.4	2.7	61
N.W.(Com.)	4,72	3,56	75	5.2	3.3	63
N.W.(Str.)	—34	—67	..	—1.2	—1.9	..
Company-managed :						
A.B.	64	30	47	3.2	1.5	47
B.N.	2,68	1,31	49	3.8	1.7	45
B.B.&C.I.	4,51	3,98	88	6.5	5.1	78
M.&S.M.	3,80	2,61	69	7.1	4.9	69
S.I.	2,46	1,85	75	7.5	4.1	55

Average net receipts of each railway and the percentages they represented of the capital at charge compared during the two periods were as indicated in Table 30. During 1924-30, the Burma, B.B.&C.I., M.&S.M. and S.I. showed average percentages varying from 6 to 8 per cent. The E.I. and N.W.(Com.) had an average exceeding 5 per cent. Net receipts on the other railways varied from 3·2 per cent to 4·5 per cent. Thus, only five systems came up to the Inchcape level of return, namely, 5·5 per cent. During the

depression period there was a steep decline in the rates of return. The highest average for the period was 5·1 per cent on the B.B.&C.I., which was closely followed by the M.&S.M. with an average return of 4·9 per cent. Among state-managed railways, only the E.I. had as high a percentage as 4·4. The N.W.(Com.) had 3·3 per cent and the others less than 3 per cent. On the Burma, E.B., A.B. and B.N. the percentage of net receipts to their respective capital at charge was more than halved.

The principal deduction from net receipts before arriving at the profit or loss in working is the interest charges. The effect of the large scale program of capital expenditure during the pre-depression years was, as we have seen, to increase the interest charges. The increase under this head on different railways was the result of additions made to their capital during the pre-depression period, and therefore naturally varied. Thus, interest charges during 1930-6, as compared with the average for 1924-30, were as shown in Table 31, 42 per cent higher on the S.I., and 34 and 30 per cent higher on the Burma and N.W.(Com.). On the others the increase varied from 15 to 24 per cent.

TABLE 31. INTEREST CHARGES

(Rupees in lakhs)

	Average 1924-30 Rs.	Average 1930-6 Rs.	Per cent of 1924-30
State-managed :			
Burma	1,15	1,54	134
E.B.	1,69	2,01	119
E.I.	5,29	6,10	115
G.I.P.	3,81	4,50	118
N.W.(Com.)	3,63	4,73	130
N.W.(Str.)	1,34	1,44	107
Company-managed :			
A.B.	76	94	124
B.N.	3,00	3,45	115
B.B.&C.I.	2,48	2,84	115
M.&S.M.	2,05	2,36	115
S.I.	1,27	1,80	142

After meeting the interest charges, the profit or loss in working the State-owned railways averaged for the two periods

as stated in Table 32. Of the ten systems, two which had losses during the first six years, namely the A.B. and B.N., produced during the depression larger losses. An average annual loss of Rs. 14 lakhs on the former increased to Rs. 64 lakhs; and on the latter a loss of Rs. 42 lakhs per annum rose to one of Rs. 2,13 lakhs. The B.B.&C.I. and E.I. alone continued to show some profits, namely Rs. 86 lakhs on the former and Rs. 33 lakhs on the latter. The remaining railways had to face considerable losses. The average losses per annum worked out on the G.I.P. to over Rs. 1·36 crores; and over Rs. 1 crore on the N.W.(Com.) and E.B. The M.&S.M. which had a high level of profits in the earlier period now operated at a loss averaging Rs. 12 lakhs a year. The S.I. which yielded a gain of a crore per year, now showed a loss of Rs. 4 lakhs. The largest losses since 1930 were on the B.N. and N.W.(Str.).

TABLE 32. GAIN OR LOSS IN WORKING *

(*In lakhs of rupees*)

	Average 1924-30	Average 1930-6
State-managed :		
Burma	36	— 65
E.B.	41	—1,11
E.I.	2,60	33
G.I.P.	1,03	—1,36
N.W.(Com.)	1,09	—1,06
N.W.(Str.)	—1,67	—2,07
Company-managed :		
A.B.	—14	— 64
B.N.	—42	—2,13
B.B.&C.I.	1,81	86
M.&S.M.	98	— 12
S.I.	1.08	— 4

* Including miscellaneous receipts and charges.

These observations relate to average results, during 1930-6. A detailed examination of the annual figures shows that only two railways, the B.B.&C.I. and Tirhoot worked at a profit throughout the depression years. Even the E.I. was faced with losses during the first three years of the depression. On most railways the situation improved slightly after 1933-4 and the losses began to decrease.

It is interesting to examine how far these results assisted in meeting the obligation under the railway convention to pay a contribution to the State. According to the terms of the convention, the contribution was calculated on the total capital at charge, and the total surplus obtained from all State-owned railways. If a contribution of ·1 per cent on the State's share of capital is charged to the accounts of the individual lines, the surplus or deficit on each system, averaged over the six-year periods will be as shown in Table 33:

TABLE 33. SURPLUS OR DEFICIT TO MEET CONTRIBUTION TO GENERAL REVENUES

(*In lakhs of rupees*)

	1924-30	1930-6
State-managed :		
Burma	10	—1,00
E.B.	—5	—1,62
E.I.	1,24	—1,12
G.I.P.	—6	—2,55
N.W.(Com.)	12	—2,21
Company-managed :		
A.B.	—32	—85
B.N.	—1,00	—2,79
B.B.&C.I.	1,15	16
M.&S.M.	55	— 56
S.I.	80	— 43

It will be seen that only six railways during 1924-30, could have shown a surplus after meeting the minimum rate of contribution. The E.I. and B.B.&C.I. would have shown balances of Rs. 124 and Rs. 115 lakhs respectively and these two railways present the best results. The average surplus on the S.I. amounts to Rs. 80 lakhs and that on the M.&S.M. to Rs. 55 lakhs. But four railways, the E.B., G.I.P., A.B. and B.N. show losses during the pre-depression period.

If the contribution of 1 per cent is taken into account during the depression period, nine out of the ten State-owned railways show considerable losses. The B.B.&C.I. alone has a surplus to show, namely, Rs. 16 lakhs a year. The E.I., which had the largest average surplus in the pre-depression period, now has a deficiency almost as large as the previous surplus. The largest deficit is that shown by the B.N., to

the extent of Rs. 2·79 crores. Next in descending order, we have the G.I.P. with a deficit of Rs. 2·55 crores; the N.W.(Com.) of Rs. 2·21 crores; E.B. of Rs. 1·62 crores and Burma of a crore. The average deficits on the A.B., M.&S.M. and S.I. were less than a crore.

We may conclude the present study of the financial status of the State-owned railways with a comparison of the general position of the state-managed and the company-managed railways during the pre-depression and the depression periods. Of the ten principal commercial lines (that is, excluding N.W. Strategic) five railways were under direct State management and five under company management. The average results for the two groups for the six pre-depression and depression years are given in Table 34 :

TABLE 34. AVERAGE RESULTS ON STATE-MANAGED AND COMPANY-MANAGED RAILWAYS COMPARED

	State-managed railways		Company-managed railways	
	1924-30	1930-6	1924-30	1930-6
(1) Gross traffic receipts	100	87	100	89
(2) Ordinary working expenses	100	93	100	96
(3) Total working expenses	100	98	100	100
(4) Operating ratio (exc. dep.)	54	59	50	56
(5) Operating ratio (inc. dep.)	65	75	61	71
(6) Net receipts	100	68	100	71
(7) Average per cent of net return on capital at charge	5·2	2·9	5·6	3·5
(8) Interest charges	100	121	100	119
(9) Gain or loss (Rs. in lakhs)	5,49	—3,85	3,31	—2,07

Even a cursory examination of these figures suffices to indicate that the company-managed railways fared better during the depression, than the state-managed railways. Gross traffic receipts declined on both groups, but while there was a decrease of 13 per cent in receipts on state-managed lines, as compared with the average for 1924-30, the company-managed lines had a reduction of only 11 per cent. In point of control of operating expenditure, the State lines were more successful as they effected a decrease of 7 per cent. The company lines had on an average 96 per cent of the expenditure during the pre-depression period. Taking depreciation charges into account, the total working

expenditure showed, during 1930-6, a decrease of 2 per cent on state-managed railways and no decrease at all on company-managed railways. Despite these features, the operating ratios on the latter were lower. The ratio, excluding depreciation, rose from 54 to 59 on State lines and from 50 to 56 on company lines. Although the increase during 1930-6 was greater on the latter, the ratio was still 3 below that on State lines. Including depreciation, the operating ratio increased by 10 on both groups, from 65 to 75 on the state-managed systems and from 61 to 71 on the company-managed systems. Here the ratios on the company lines indicate an even better position, namely 4 per cent below the level of the State railways.

The average net receipts also disclose approximately the same position in the two groups. There was a considerable decrease in both, but that on company-managed lines was 29 per cent as compared with their average for 1924-30. This is 3 per cent higher than the average for the State systems. Expressing the net receipts as a percentage of the capital at charge of the two groups, the rate was 2·9 per cent for state-managed railways as compared with 3·5 per cent for company-managed railways. There was almost the same difference in the rates during 1924-30 which were 5·2 per cent for State, and 5·6 per cent for company, lines. This implies that the former on the whole never reached the Inchcape rate of 5½ per cent return on capital whereas the latter did.

The increase in interest charges was approximately the same and amounted, as compared with 1924-30, to 21 per cent for the state-managed group and 19 per cent for the company-managed group. Deducting interest, there was a deficit of Rs. 3·85 crores in 1930-6 against a surplus of Rs. 5·49 crores in 1924-30 on state-managed lines. On company-managed lines a total surplus of Rs. 3·31 crores was transformed into a loss of Rs. 2·07 crores.

The trends, generally speaking, were similar on both the state-managed and company-managed railways. The differ-

ences in the performance of the two classes, taken as groups, were not great and too much should not be read into the group results. Yet it is significant that the final results tip the scale under most of the heads in favour of the company-managed railways.

While the comparison points to the superiority of company-management, even with all the limitations under which private enterprise operates on our railways, the financial results do not afford the only criteria. With the tendency to emphasise and serve the interests of the public in a fuller sense, such as through attempts to improve the amenities of the users and of the employees—which must be more dominant in State railway undertakings, particularly with a legislature constantly exerting pressure to that end—it may well be that the sacrifice of revenue to the administration may be more than offset by public satisfaction and the goodwill thus engendered. Final conclusions on the merits of the respective systems must, therefore, be reserved until all these facts are weighed and discussed.

The general conclusions emerging from the survey of the financial results of working may be summed up as follows :

(1) The financial record of the Indian railways taken as a whole during 1900-30, has been quite satisfactory, as the traffic receipts have increased and yielded a substantial surplus to the State after payment of the interest charges.

(2) Only two railways, the E.I. and B.B.&C.I., have throughout yielded substantial profits to the State. Among the others only the A.B. and the N.W. have during 1900-30, produced on an average a loss to the State. The remaining lines have on the whole produced a gain to the State.

(3) The trend of working expenses has been steadily upward, particularly during the second decade of the present century ; but during 1920-30, there has been a tendency to stabilisation of working expenditure at higher levels.

(4) During the post-separation period, the operating ratio, therefore, tended to remain on higher levels, (principally in consequence of the increased working expenditure). But earnings were generally sufficient to meet all the charges and leave a surplus adequate to pay the contribution and accumulate a reserve fund.

(5) The depression period exposed two defects which were observed during the previous years, namely, the higher standards of expenditure and the effects of the enormous capital expenditure. These two factors operated to reduce net receipts and to increase interest charges to such an extent that only the E.I. and B.B.&C.I. were during 1930-6 able to meet their interest charges out of their net receipts.

(6) The status of certain railways is shown to have become worse during the post-separation years. Thus the B.N. and E.B., which on the whole, produced a surplus on their working, appear to have deteriorated financially during 1925-35.

(7) A remarkable feature brought out by the analyses in this chapter is the comparatively better picture presented by the company-managed railways. Thus, as regards the operating ratios and the percentage of net receipts to capital, these lines show that the growth of expenditure has been comparatively lower and the decline in the percentage of net receipts to capital has been less than on the state-managed railways during the depression period.

(8) The Separation Convention prescribed that the State-owned railways should be so operated that they should pay in addition to the interest on capital, a contribution of one per cent to the State on its outlay. If the ability to pay this contribution is taken as the test of successful operation, nine out of the ten main systems must be deemed as having utterly failed to produce a satisfactory result during 1930-6. Even the E.I. is found to have been short of Rs. 1,45 lakhs on an average to pay the contribution during 1930-6. Only the B.B.&C.I. comes out of this test with a surplus balance in excess of one per cent of the capital outlay. Thus the eight of the ten have found it impossible to cover even the interest on the capital at charge, out of their net receipts. That part of the convention which relates to the contribution, was nullified by the financial results during the depression.

The financial position of Indian railways since the separation discussed in this chapter deals only with the final results. The significance of the results of working can be properly understood only in the light of the factors which have influenced them. These factors are, broadly speaking, to be found in the volume of traffic and expenditure incurred by railways in handling it. We shall now proceed to a detailed study of these topics.

CHAPTER IV

RAILWAY TRAFFIC: PASSENGER TRANSPORTATION

RAILWAYS obtain their income by carrying traffic and charging a certain price for the service they render. Their earnings are, therefore, dependent on both the volume of traffic and the price charged for transportation. Railways are particularly susceptible to the law of increasing returns. Consequently, it costs them proportionately less per unit of additional transportation, a fact attributable to the high proportion of fixed costs on account of the elaborate machinery, plant and equipment, which have to be maintained irrespective of the quantity of traffic moved. This characteristic explains why a slight increase in traffic may often be accompanied by a more than proportionate increase in the net income. A second feature is that transportation is a perishable commodity: it cannot be stored or conserved, but must be used while it

is being produced. It, therefore, pays a railway to sell all the transportation which it can produce. This has led to a pricing system, the objective of which is to increase traffic to the maximum capacity of a railway. A study of railway traffic and the rating system is vital to the proper understanding of the financial condition of railways.

PROGRESS OF TRAFFIC EARNINGS

The progressive character of the gross traffic receipts of Indian railways since 1900 was indicated generally in our discussion of the operating ratio. We may now proceed to examine their trends in greater detail. A striking increase is described by the gross earnings of all railways during the present century. It is necessary to remember that the period

TABLE 35. PROGRESS OF GROSS EARNINGS AS COMPARED WITH ROUTE MILAGE AND CAPITAL*
(ALL RAILWAYS).

Year	Gross earnings			Route milage	Capital
	Rs. in crores	% of 1900	Per mean mile worked Rs.	% of 1900†	% of 1900‡
1900	31·54	100	13,025	100	100
1905	41·70	132	14,744	114	109
1909	47·06	149	14,948	127	130
1914-5	60·43	192	17,123	143	158
1919-20	89·15	283	24,269	148	172
1920-1	91·99	292	24,842	150	190
1921-2	92·89	295	24,809	151	197
1922-3	105·65	335	27,986	152	212
1923-4	107·80	342	28,350	154	218
1924-5	114·75	364	29,785	155	222
1925-6	113·39	360	29,335	156	229
1926-7	112·36	356	28,540	158	239
1927-8	118·26	375	28,486	160	250
1928-9	118·87	377	28,029	165	252
1929-30	116·08	368	26,670	169	260
1930-1	106·58	338	25,084	171	264
1931-2	97·21	308	22,655	173	266
1932-3	96·21	305	22,202	174	269
1933-4	99·58	316	22,927	174	268
1934-5	102·81	326	23,535	174	269
1935-6	103·84	330	23,714	174	267
1936-7	108·07	342	24,668	174	267

* *Indian Railways Administration Report*, Vol. II, 1905, 1909, 1916-7, 1921 and *Railway Board's Reports*, Vol. II, for the succeeding years.
† The total route milage in 1900 was 24,752.
‡ The total capital at charge in 1900 was Rs. 329·53 crores.

covered was one of railway development and expansion. In 1900, for example, we had an aggregate route milage of 24,752, and on 31 March 1935 the railway network represented a route milage of 43,021. The capital at charge also advanced during the same period from Rs. 330 crores to Rs. 885 crores. Every increase in the railway network brings additional traffic from the new regions exploited, and consequently some increase in earnings. The traffic receipts have therefore to be considered in relation to this factor. To facilitate a clearer perspective of the earning capacity of Indian railways during the developmental period, the position may be briefly surveyed from 1900.

At the beginning of the century traffic receipts of Indian railways amounted to Rs. 31·54 crores. By 1909 the total milage had risen by 27 per cent, capital outlay by 30 per cent, and gross earnings by 49 per cent. The next decade witnessed an even more remarkable improvement. In 1920-1 the increase in the route milage, the capital outlay and the gross earnings amounted to 50 per cent, 90 per cent, and 192 per cent respectively. Towards the end of the next ten years, which will be examined in greater detail, the route milage stood, as compared with 1900, 69 per cent higher, while capital outlay and gross earnings were 160 per cent and 268 per cent higher respectively. The figures indicate that the gross traffic receipts during the present century have improved much more in proportion to the increase either in the route milage or the capital at charge. The same conclusion is reached by examining the trend of gross earnings per mean mile worked. From Rs. 13,000 the receipts per mean mile steadily rose to Rs. 29,785 in 1924-5, representing an increase of 130 per cent.

Traffic receipts are derived from two principal sources: coaching and goods traffic. Coaching traffic consists mostly of passenger traffic and includes in addition parcels and certain miscellaneous services. The relative importance of the earnings from these two sources will be clear from Table 36, which presents the earnings from goods and coaching traffic for

TABLE 36. GOODS AND COACHING REVENUES*

(ALL RAILWAYS)

(*Rs. in crores*)

Year	Goods revenue Rs.	Goods revenue % of gross earnings	Coaching revenue Rs.	Coaching revenue % of gross earnings
1900	20·37	65	10·26	33
1905	26·21	63	14·39	34
1909	28·12	60	17·52	37
1914-5	35·09	58	23·44	39
1919-20	47·12	53	39·07	44
1920-1	47·97	52	40·85	44
1921-2	49·52	53	40·34	43
1922-3	58·30	55	43·83	41
1923-4	60·64	56	45·05	42
1924-5	66·83	58	44·90	39
1925-6	64·83	57	45·82	40
1926-7	65·36	58	44·48	40
1927-8	69·58	59	45·67	39
1928-9	71·44	60	44·50	37
1929-30	69·09	60	44·67	38
1930-1	64·56	61	39·97	38
1931-2	58·88	61	36·89	38
1932-3	56·99	59	36·64	38
1933-4	61·73	62	35·30	35
1934-5	64·57	63	35·52	35
1935-6	64·88	62	35·85	35
1936-7	70·03	65	35·77	33

* Source same as for the previous table.

selected years before 1920 and the subsequent years, and their percentage proportion. Generally speaking, Indian railways obtain about 60 per cent of their total income from goods traffic and about 36 per cent from coaching traffic. In 1929-30, for example, goods earnings accounted for 60 per cent and coaching earnings 38 per cent of the total receipts. The difference which has usually amounted to less than 5 per cent, represents certain miscellaneous receipts.[1]

The principal features of the passenger and goods services during the period 1924-37 are examined in this and the next two chapters. Of the two classes of traffic, passenger traffic presents problems comparatively simpler in character and may, for convenience in treatment, be examined first.

[1] These consist of items such as telegraph earnings, income from other railways, such as hire and penalties on interchanged stock, rent of stations jointly occupied, rents, tolls, advertisement receipts, etc.

The striking increase in railway revenues from the beginning of the present century is reflected in coaching earnings. The progress of passenger earnings, representing more than 80 per cent of the coaching earnings may be seen from Table 37.

TABLE 37. PASSENGER RECEIPTS AND TRAFFIC*

(ALL RAILWAYS)

(*Rs. in crores*)

Year	Passenger coaching receipts Rs.	Number of passengers (in millions)	Year	Passenger coaching receipts Rs.	Number of passengers (in millions)
1900	8·95	176·31	1923-4	38·09	567·32
1905	12·74	248·16	1924-5	38·76	576·35
1910	17·12	371·58	1925-6	39·49	599·15
1911	18·49	389·86	1926-7	38·12	604·37
1912	19·56	417·23	1927-8	39·18	623·12
1913-4	21·18	457·72	1928-9	38·24	620·11
1914-5	20·35	451·09	1929-30	39·58	634·30
1915-6	20·99	464·38	1930-1	34·30	575·83
1916-7	23·08	486·03	1931-2	31·35	505·84
1917-8	25·23	430·27	1932-3	31·32	501·90
1918-9	28·98	459·73	1933-4	30·09	489·61
1919-20	33·16	520·03	1934-5	30·35	496·59
1920-1	34·77	559·25	1935-6	30·56	503·69
1921-2	34·29	561·33	1936-7	30·33	509·88
1922-3	37·59	572·62			

* Source : *Railways in India Administration Report*, Vol. II, and *Railway Board's Reports*, Vol. II.

In 1900 total coaching earnings from all railways amounted to Rs. 10·26 crores, of which passenger receipts accounted for Rs. 8·95. crores. By 1911 the earnings under both had doubled, and by 1918-9 more than trebled. From then until 1925-6, barring 1921-2, each year set up a new record for both coaching and passenger traffic receipts. In 1922-3, earnings had more than quadrupled, and in 1924-5 the percentages as compared with 1900, rose to 438 for coaching earnings and 433 for passenger receipts. Till 1929-30 the percentages of earnings fluctuated above 400 but with the beginning of the depression in the following year there was a large decrease. The percentages dropped to 344 for coaching earnings and 336 for passenger earnings in 1933-4. During the succeeding three years the position remained about the same.

The improvement in passenger traffic is even more clearly indicated by the number of passengers. In 1900 they totalled 176 millions. In ten years, this figure was more than doubled, being 372 millions. In the next ten years, this rate of increase persisted and in 1919-20 the number had risen to 520 millions, representing an increase of 195 per cent. Over the next two years, there was a further increase to 561 millions. At the end of the decade, in 1929-30, the traffic rose to still higher levels and recorded the highest figure so far attained, namely, 634 millions or an increase of 260 per cent over 1900. The number of passengers rapidly declined in succeeding years and in 1933-4 came down to 490 millions, the lowest figure touched since 1918-9. There was only a slight improvement thereafter.

That much of the increase during the first twenty years of this century represented a real and permanent extension of the travel market is shown by the fact that despite the severity of the depression, in the worst year for passenger traffic, namely, 1933-4, the number of passengers was 178 per cent higher and earnings 236 per cent higher than in 1900.

Passenger transportation on Indian railways is provided under four classes, first, second, inter and third. With the exception of one or two railways, all the systems maintain these classes of services. The four classes are divided on the basis of the individual's ability to pay for additional comfort in travel and express a broad social stratification. The upper classes, first and second, are generally patronised by those who can afford the higher charges and constitute the wealthier section of the travelling public. Inter class finds favour with the upper middle class and third with the lower middle class and the rest of the population. The relative importance of each class from the point of view of traffic and earnings has remained generally the same. In point of volume of traffic and revenue, the third class is the most important. In 1911, for instance, the number of third class passengers was 348 millions or 89 per cent, and the amount of earnings Rs. 15·73

crores or 85 per cent. The first, second and inter classes, together with season ticket and vendor traffic accounted for the balance. The proportion of the number of passengers by first, second and inter classes to the total was 0·2 per cent, 0·8 per cent, and 3 per cent, respectively and the proportion of earnings from these classes to the total 3·6 per cent, 4·5 per cent, and 5·9 per cent.

The number of passengers in each class disclosed large increases during 1900-20; first class by 113 per cent; second by 182 per cent; inter by 79 per cent; and third by 199 per cent. Except in the case of inter, even higher figures were reached during the succeeding three years.

The earnings from the four classes reflected the upward trend in traffic. First class passenger revenues as compared with 1900 doubled by 1911, trebled by 1917-8, and quadrupled by 1919-20. Second class income was trebled by 1917-8 and almost quintupled by 1921-2. Inter class was less rapid in its increase of receipts, the revenue being doubled by 1915-6, and more than trebled by 1920-1. Third class passenger receipts, the most important of all, were better than inter, being more than doubled by 1911 and trebled by 1918-9, and more than quadrupled by 1924-5. Thus the expansion in income exceeded that in traffic.[2]

This brief summary of the trends of passenger traffic and earnings since 1900 helps one to view the situation during the succeeding years from the point of view of long-range trends. Before proceeding to the developments since 1924-5, the character of the statistical data may be briefly examined.

CHANGES IN STATISTICS AND NEW CLASSIFICATION

There is a break in the continuity of statistics with effect from 1922-3. In that year was undertaken the reorganization in the compilation and presentation of railway statistics. The traffic and earnings of the season ticket and vendor group were merged in the four classes and separate figures are not

[2] See Statistical Statement II in the Appendix.

available from 1922-3 onwards. The grouping of the railways into three classes according to their earning capacity was also introduced from that year onwards. While these changes vitiate the comparability of the earlier and later statistics the fuller data available after the revision facilitate a more detailed examination.

As our survey deals principally with the Class I railways during 1924-37, it should be remembered that the earnings of these systems represent about 95 per cent of the earnings of all railways.

For statistical purposes, the Class I railways are divided according to their gauges, namely broad, metre and narrow. The railways in each group and their route milages as on 31 March 1935, stood as follows :

CLASS I RAILWAYS GROUPED ACCORDING TO THEIR GAUGES

	Railways	Route milage on 31 March 1935	
	Broad Gauge		
(1)	Bengal Nagpur	2,522	
(2)	Bombay, Baroda and Central India ..	1,260	
(3)	Eastern Bengal	896	
(4)	East Indian	4,449	
(5)	Great Indian Peninsula	3,553	
(6)	Madras and Southern Mahratta ..	1,157	
(7)	Nizam's State	688	
(8)	North-Western	6,264	
(9)	South Indian	761	
			21,[illegible]
	Metre Gauge		
(1)	Assam Bengal	1,319	
(2)	Bengal and North-Western ..	2,191	
(3)	Bombay, Baroda and Central India ..	2,208	
(4)	Burma	2,060	
(5)	Eastern Bengal	1,070	
(6)	East Indian	66	
(7)	Jodhpur	975	
(8)	Madras and Southern Mahratta ..	2,079	
(9)	Nizam's State	660	
(10)	Rohilkund and Kumaon	562	
(11)	South Indian	1,802	
			14,992

	Narrow Gauge		
(1)	Bengal Nagpur	926	
(2)	Bombay, Baroda and Central India ..	224	
(3)	Eastern Bengal	37	
(4)	Great Indian Peninsula	244	
(5)	North-Western	686	
(6)	South Indian	99	
			2,216
	TOTAL ..		38,758

The length of line for the broad, metre and narrow gauge railways were respectively 55·6 per cent, 38·7 per cent, and 5·7 per cent of the total, but these percentages are no indication of their relative importance from the point of view of traffic. The passenger revenues earned from broad gauge are approximately two-thirds of the total or slightly more than twice the earnings of the metre gauge, with narrow gauge accounting for only a small fraction.

The fluctuations in income of Class I railways were almost identical with those of all railways. It will be noticed from the statistics given in Table 38 that passenger traffic receipts

TABLE 38. PASSENGER TRAFFIC EARNINGS*

(CLASS I RAILWAYS)

(*Rs. in crores*)

Year	Class I railways Rs.	% of 1924-5	All railways Rs.	% of 1924-5
1921-2	32·98	89	34·29	88
1922-3	36·17	98	37·59	97
1923-4	36·35	98	38·08	98
1924-5	36·97	100	38·75	100
1925-6	37·68	102	39·46	102
1926-7	36·47	99	38·12	98
1927-8	37·47	101	39·18	101
1928-9	36·44	99	38·24	99
1929-30	36·81	100	38·58	100
1930-1	32·68	88	34·30	89
1931-2	29·87	81	31·35	81
1932-3	29·83	81	31·32	81
1933-4	28·51	77	30·09	78
1934-5	28·76	78	30·35	78
1935-6	28·95	78	30·56	79
1936-7	28·68	78	30·33	78

* *Indian Railways Administration Reports*, Vol. II, 1921-3; and *Railway Board's Reports*, Vol. II, for the following years.

were fairly stable from 1922-3. During the eight years 1922-30 earnings oscillated between Rs. 36 crores and Rs. 38 crores. Only in 1925-6 did they rise to Rs. 37·68 crores, the highest point reached during the pre-depression period. The figures for the depression period provide an eloquent commentary on the effects of the crisis in contracting the travel market for railways. In 1930-1 passenger receipts dropped to 88 per cent; and over the next two years to 81 per cent. The lowest point was touched in 1933-4, when the comparative deterioration amounted to 23 per cent.

We may now proceed to consider the trends of traffic and earnings during the period 1924-37 in the four classes of passenger transportation.

FIRST CLASS PASSENGER TRAFFIC

Number of passengers

The Class I railways carried 1,195 thousand first class passengers in 1924-5, or about 10 per cent less than in the previous year. There was, as may be seen from the figures and percentages given in Table 39, a steady decrease thereafter, dropping, as indicated by the percentages[3], to 90 in 1927-8, 74 in 1929-30 and 48 in 1931-2. This deterioration continued uninterrupted and over the period 1933-7, the number of first class passengers had declined to between 38 and 40 per cent of the basic level.

The traffic on the individual lines reflected these trends, but broad gauge lines fared comparatively worse than metre gauge. The former carried 923,000, or 77 per cent of the total first class passengers during 1924-5, representing a reduction of 10 per cent on the figures of the previous year. Till 1929-30, there was a gradual decrease averaging about 4 per cent a year. With the commencement of the depression, however, there was a landslide and from a percentage of 74 in 1929-30, the number of passengers carried dropped to 46 in 1931-2 and 36 in 1935-6.

[3] The percentages here and in the following pages are worked out taking 1924-5 as the base period, as may be seen from the Tables 39-43.

TABLE 39. FIRST CLASS PASSENGER TRAFFIC

Year	1. Number of passengers (in millions) Broad No.	%	Metre No.	%	Total No.	%	2. Passenger miles (in millions) Broad No.	%	Metre No.	%	Total No.	%
1923-4	1·02	111	0·28	108	1·312	110	85·00	100	19·31	101	105·60	100
1924-5	0·92	100	0·26	100	1·195	100	85·07	100	19·05	100	105·24	100
1925-6	0·86	93	0·25	96	1·123	94	88·44	104	19·87	104	109·34	104
1926-7	0·84	91	0·25	96	1·106	93	95·76	113	20·22	106	116·79	111
1927-8	0·82	89	0·24	92	1·076	90	104·89	123	21·07	111	126·69	120
1928-9	0·77	84	0·22	85	0·997	83	103·87	122	20·19	106	124·80	119
1929-30	0·68	74	0·20	77	0·886	74	100·93	119	20·23	106	121·85	116
1930-1	0·56	61	0·17	65	0·745	62	90·40	106	17·65	93	108·65	103
1931-2	0·42	46	0·14	54	0·572	48	76·07	89	15·07	79	91·62	87
1932-3	0·36	39	0·13	50	0·493	41	67·16	79	13·44	71	80·96	77
1933-4	0·35	38	0·12	46	0·477	40	66·20	78	12·96	68	79·54	76
1934-5	0·34	37	0·12	46	0·469	39	67·19	79	13·02	68	80·52	77
1935-6	0·33	36	0·12	46	0·460	38	68·89	81	13·44	71	82·77	79
1936-7	0·34	37	0·13	50	0·473	40	70·84	83	14·36	75	85·56	81

Year	3. Average lead (in miles) Broad No.	%	Metre No.	%	Total No.	%	4. Earnings (Rs. in lakhs) Broad Rs.	%	Metre Rs.	%	Total Rs.	%
1923-4	83·5	91	69·3	93	80·3	91	98·47	106	26·09	108	127·59	107
1924-5	92·1	100	74·7	100	88·1	100	92·54	100	24·25	100	119·57	100
1925-6	103·4	112	80·5	108	97·4	110	91·11	98	23·89	99	117·58	98
1926-7	111·4	121	82·0	110	105·6	120	90·81	98	22·23	92	115·09	96
1927-8	127·3	138	88·5	118	117·7	134	87·38	94	21·92	90	110·78	93
1928-9	135·7	147	93·1	125	125·2	142	87·39	94	21·04	87	109·73	92
1929-30	148·9	162	103·4	138	137·5	156	80·45	87	20·61	85	102·24	86
1930-1	160·8	175	102·8	138	145·9	166	73·31	79	17·90	74	92·40	77
1931-2	181·1	197	105·4	141	160·3	182	65·82	71	15·03	62	81·85	68
1932-3	188·5	205	103·3	138	164·4	187	62·04	67	13·87	57	76·70	64
1933-4	191·4	208	104·7	140	166·6	189	60·95	66	13·19	54	74·75	62
1934-5	197·6	215	105·0	140	171·7	195	61·77	67	13·21	54	75·58	63
1935-6	206·4	224	111·9	150	179·9	204	62·46	68	13·69	56	76·74	64
1936-7	210·7	229	109·4	146	180·7	205	64·99	70	14·33	59	79·92	67

Source : *Railway Board's Reports*, Vol. II.

Metre gauge railways carried in 1924-5 only 260,000 passengers or 22 per cent of the total. The figure declined steadily to 196,000, or to a percentage of 77 in 1929-30, a level higher than that on the broad gauge. During the depression period, however, the percentage stood at half the basic figure and even in 1935-6, when the lowest level was touched, it was only 46 against 36 on the broad gauge, while in 1936-7, there was an improvement to 50. This group of lines thus exhibited a better record than the broad gauge.

All these features are disclosed in a more or less accentuated form in the traffic of the different railways.[4] The losses on some lines even in the pre-depression year were serious enough : the B.B.&C.I. (B.G.) lost 53 per cent and the Burma 36 per cent of their respective traffic in 1924-5. The effect of the depression proved almost catastrophic to certain lines. The B.B.&C.I. which had carried 30 per cent of the entire first class traffic in 1924-5 had only 13 per cent of the number in 1933-4. The Burma carried only 30 per cent of the passengers transported in 1924-5. The decreases on the others, though smaller, were still considerable. During the next three years traffic remained stagnant on most railways.

First class passenger traffic thus presented a serious situation.

Passenger miles and average leads

The volume of traffic measured solely by the number of passengers does not allow for the effect of distances travelled. These may be combined into a single factor, namely, passenger miles, which present a more accurate picture of the volume of transportation.

The passenger milage of first class passengers in 1923-4 approximated 106 millions. The slight decline in 1924-5 was followed by a rise to 127 millions during 1927-8, and the percentage amounted to 120. Despite the decrease which started in the succeeding year the percentage for the passenger milage

[4] For the statistics of the different railways for select years, see Statistical Statement III in the Appendix.

in the pre-depression year stood at 116 against 74 for the number of passengers. From the next year onwards passenger journeys decreased rapidly and the percentage dropped to 76 in 1933-4. The heavy decrease in the number of passengers, however, was partly counterbalanced by the increase in the length of journeys. Even during the depression the decline in passenger milage was not so steep as in the number of passengers. In 1933-4 the number of passengers was only 40 per cent of 1924-5 whereas passenger milage stood as high as 76 per cent.

Broad gauge lines carried more than 80 per cent of the total. Passenger milage in both groups reached the highest levels in 1927-8, the percentages being 123 for the broad gauge and 111 for the metre gauge. The comparison of the percentages indicates that both in regard to the pre-depression increase and the decline during the depression the metre gauge as a group was on a lower level of about 10.

The larger passenger milage as compared with the number of passengers was undoubtedly an important factor which prevented the financial results of first class from becoming worse than they were. Thus with but 13 per cent of the passengers carried in 1924-5, the B.B.&C.I.(B.G.) had, in 1933-4, 77 per cent of the passenger milage. By 1936-7 a turn for the better is to be seen on most lines. With two-fifths of the first class passengers carried in the basic year, the Class I railways in this year did four-fifths of the passenger milage.

These higher levels of passenger milage are to be explained by the longer average journeys done by the public. The effect of the distance factor is brought out clearly by the statistics of average leads. The average distance travelled by the first class passenger showed an uninterrupted increase throughout the period. From 88 miles per passenger in 1924-5, the lead advanced to 138 miles in 1929-30 and to 181 miles in 1936-7, increases respectively of 56 per cent and 105 per cent.

The average leads on broad and metre gauge railways showed different rates of increase. During 1924-30 the average

lead on the former rose from 92 miles to 149 miles and to 211 miles by 1936-7. The leads on the metre gauge increased from 75 miles to 103 miles and to 109 miles over the same periods.[5]

The fluctuations and trends referred to in connexion with the number of passengers, passenger miles and leads must have operated on the earnings from the first class. Let us, therefore, examine the character of earnings from this class during the period 1924-37.

Earnings

The total receipts from first class passengers in 1924-5 amounted to Rs. 120 lakhs, a decrease as compared with the previous year of Rs. 8 lakhs. The figures for succeeding years disclose a progressive deterioration. In fact, there is not a single year during 1923-34 in which the decline was arrested. Till 1926-7, there was a gradual decrease, but from 1928-9 onwards the fall in receipts accelerated. The percentage dropped to 86 in 1929-30. With the impact of the depression in the succeeding year it receded to 77 and by 1933-4 the bottom was touched, the earnings amounting to only Rs. 75 lakhs or 62 per cent of those of 1924-5. The downward course appears to have been arrested in 1934-5 and at the end of 1936-7, earnings amounted to Rs. 80 lakhs and the percentage rose to 67.

These trends were faithfully reflected in the revenues of broad and metre gauge railways. As in the case of traffic, the former accounted for more than three quarters of the total receipts from the first class, which amounted to Rs. 93 lakhs in 1924-5. The decrease from this level is shown by the percentage which declined to 87 in 1929-30 and to 66 in 1933-4. Only a slight improvement to 70 occurred by 1936-7.

The metre gauge railways had larger losses during the pre-depression period, but by 1929-30, the deterioration was

[5] The average journeys on the different lines naturally exhibit these tendencies in varying degrees. The B.B.&C.I. had the highest record of increase from 30 miles in 1924-5 to 180 miles in 1936-7, an increase of 500 per cent. For the figures of the other railways see Appendix.

at about the same level as the broad gauge lines. They sustained a greater diminution of income during the depression and in 1933-4, the percentage of receipts stood at 54. Thus of the two groups, broad gauge railways showed over the whole period a lower rate of decline. The earnings of the metre gauge railways, already susceptible to greater decrease prior to 1930, proved to be particularly so during succeeding years.

First class passenger receipts on the Class I railways thus disclose a steady decline throughout the post-separation period. This, it may be recalled, runs counter to the trends of passenger receipts considered earlier, which showed the beginning of a decrease only after 1930-1. But the decrease in first class passenger revenues had started in 1923-4 itself, and has persisted throughout the era of higher levels of passenger earnings after 1924. The tendency appears to be abnormal and inconsistent with the general trends since 1900. The first class has not only been excluded from participating in the prosperity of the post-war decade : it has failed even to maintain its own earlier levels. In fact, the number carried during 1936-7 was less than that of 1900 itself.

Undoubtedly more than one factor has been at work to bring about this decrease in earnings, but from the point of view of railways changes in passenger fares, other things remaining unchanged, would be most likely to exert a direct influence on total earnings. Generally speaking, enhancement would have the effect of depressing demand and a decrease that of stimulating it. An examination of the average fares for the first class will, even if it proves nothing else, serve at least to eliminate one factor which, from the side of the railways, operates directly on earnings.

Average rate charged per mile per passenger

The average receipts per first class passenger per mile on Class I railways amounted to 23·2 pies in 1923-4 and 21·8 pies in 1924-5.[6] There was a gradual reduction during the succeed-

[6] See Table 40 which presents the average rates per mile for all the classes.

ing years, and in 1929-30, the average rate was 16·1 pies per mile, a decrease of 26 per cent as compared with 1924-5. From the following year onwards there was a rise to 18 pies in 1932-3. The average rate stood at this level till 1934-5 after which there was a slight decrease.

Average rates on the broad gauge railways were lower and amounted to 20·8 pies in 1924-5, as compared with 24·4 pies on the metre gauge. There was a gradual decrease to 15·3 pies or of 26 per cent on broad gauge in 1929-30 and to 19·1 pies or of 22 per cent on metre gauge in 1931-2, after which there was a slight increase of more than one pie on the former and less than a pie on the latter.

The trend has thus been of a substantial decrease during the first six years and a slight increase over the succeeding period. On certain lines there was a material increase during the depression as compared with 1929-30, as on the E.I., G.I.P. and N.W.

As the statistics of average rates per passenger per mile are obtained by dividing the earnings by the total passenger miles of the class concerned, they reflect the effects of both the changes in fares and concessions, as well as the distance-preferences of passengers. The second factor becomes specially important where a telescopic fare system is in use. That an increase has occurred in the average length of journeys has already been stated. We may now consider the changes which have taken place in the structure of first class passenger fares.

First class passenger fares

Although passenger transportation does not present such complex problems of reasonableness, preference and discrimination as are frequently met in the carriage of goods, passenger fares may be discriminatory, or too high, or too low. The same reasons which impelled Government to prescribe maxima and minima rates for the transportation of goods also dictated the adoption of a similar practice for passenger fares. Prior

TABLE 40. AVERAGE FARE PER MILE PER PASSENGER

	First Class						Second Class					
	Broad		Metre		Total		Broad		Metre		Total	
Year	Pies	%	Pies	%	Pies	%	Pies	%	Pies	%	Pies	%
1923-4	22·2	107	25·9	106	23·2	106	10·1	108	11·5	103	10·5	106
1924-5	20·8	100	24·4	100	21·8	100	9·38	100	11·2	100	9·93	100
1925-6	19·8	95	23·1	95	20·6	94	8·99	96	10·7	96	9·45	95
1926-7	18·2	87	21·1	86	18·9	87	8·12	87	9·81	88	8·53	86
1927-8	15·9	76	20·0	82	16·8	77	7·31	78	9·27	83	7·74	78
1928-9	16·2	78	20·0	82	16·9	78	7·41	79	9·31	83	7·84	79
1929-30	15·3	74	19·5	80	16·1	74	7·19	77	9·23	82	7·64	77
1930-1	15·6	75	19·5	80	16·3	75	7·16	76	9·27	83	7·53	76
1931-2	16·6	80	19·1	78	17·2	79	7·90	84	9·24	83	8·22	83
1932-3	17·7	85	19·8	81	18·2	83	8·55	91	9·43	84	8·77	88
1933-4	17·7	85	19·5	80	18·0	83	8·47	90	9·46	84	8·71	88
1934-5	17·7	85	19·5	80	18·0	83	8·52	91	9·19	82	8·68	87
1935-6	17·4	84	19·6	80	17·8	82	8·35	89	8·23	73	8·35	84
1936-7	17·6	85	19·2	79	17·9	82	8·41	90	7·96	71	8·32	84

	Inter Class						Third Class					
	Broad		Metre		Total		Broad		Metre		Total	
Year	No. Pies	%	No. Pies	%	No. Pies	%	No. Pies	%	No. Pies	%	No. Pies	%
1923-4	5·07	104	4·99	100	5·09	103	3·47	99	3·35	100	3·44	100
1924-5	4·89	100	5·00	100	4·92	100	3·49	100	3·34	100	3·45	100
1925-6	4·89	100	4·82	96	4·91	100	3·48	100	3·35	100	3·45	100
1926-7	4·55	93	4·49	90	4·56	93	3·35	96	3·24	97	3·33	97
1927-8	4·23	87	4·25	85	4·25	86	3·22	92	3·19	96	3·22	93
1928-9	4·14	85	4·17	83	4·16	85	3·02	87	3·15	94	3·07	89
1929-30	3·95	81	4·27	85	4·00	81	2·92	84	3·09	93	2·99	87
1930-1	4·04	83	4·30	86	4·08	83	2·90	83	3·09	93	2·99	87
1931-2	4·17	85	4·37	87	4·20	85	3·05	87	3·16	95	3·10	90
1932-3	4·21	86	4·35	87	4·24	86	3·15	90	3·22	96	3·18	92
1933-4	4·17	85	4·32	86	4·20	85	3·11	89	3·17	95	3·13	91
1934-5	4·20	86	4·33	87	4·22	86	3·00	86	3·14	94	3·04	88
1935-6	4·19	86	4·27	85	4·21	86	2·97	85	3·04	91	3·00	87
1936-7	4·10	84	4·11	82	4·11	83	2·93	84	2·97	89	2·95	86

Source : *Railway Board's Reports*, Vol. II.

to April 1917, the maximum fare of each class was 50 per cent higher than the minimum. The minimum for first class was 12 pies and the maximum was 18 pies per passenger per mile. The difficulties during the period of the war and the urgency of conservation of locomotive power to meet military and other essential traffic rendered it imperative to restrict passenger traffic. As enhancements prescribed within the maxima proved inadequate, the Government of India issued orders in April 1917 raising the maxima fares. Compared with the minima, the enhancements resulted in raising the maxima to twice the minima for the first three classes. Thus the maximum for the first class became 24 pies per passenger per mile. By 1922-3, as a result of the increase in the cost of working expenses, the maximum was raised still further. The comparative increase in the fares was as follows :

	Minimum	Maximum	Percentage of max. to min.
Prior to 1917	12 pies	18 pies	150
April 1917	12 ,,	24 ,,	200
1922-3	12 ,,	32 ,,	266⅔

While, therefore, the minimum was left untouched, the maximum was raised from 150 per cent to 266⅔ per cent of the former, thus widening the margin considerably. Despite the increase of the maximum to 32 pies, certain railways retained the maximum of 1917, as the effective rate, while others such as the B.B.&C.I., A.B., G.I.P., M.&S.M. and S.I. took advantage of the higher maximum to raise the fares to 30 pies. There were with a few exceptions, two scales in the rates, namely one for the first 300 miles and the other, which was lower, for the remaining distance travelled. Although some reductions were made by 1924-5 the position was generally as stated above. The fare for the first 300 miles was 24 pies and for the remainder 18 pies. On the E.B. and S.I. the rate was 30 pies, but on the former the distance was reduced to 180 miles for the first scale after which a fare of 20 pies was applied. On the latter the fare for the excess over 300 miles was 22½ pies, which was also the general rate on the trains other than mails, without limit of distance.

By 1929, further reductions were effected on most of the railways.[7] The lowering of fares took different forms. In some cases the fares themselves were lowered, and in certain others additional steps were introduced in the scales as on the E.I. In a few cases as on the G.I.P. and S.I., the differentiation of distance was abolished and the principle of a uniform fare per mile regardless of distance was adopted. While in 1925 the steps in the scales of distance were generally two—1-300 miles, and 301 miles and over—in 1929 the first step was reduced to 1 to 100 or 150 miles. This gave rise on the E.I. to an intermediate scale of 101-300 miles. Where the 150 mile-scale became the limit of the first step, the second was reduced to 150 miles and over.

During the depression attempts were made to prevent deterioration in passenger receipts by modifications in fares. If we take the position in 1935, changes have been few in the basic fares. Only certain railways sought improvement by a reversion from uniform milage to distance scales, a change from the latter to the former, or a slight enhancement of the fares for the longer distances. Thus, there was by 1935-6 but a slight rise in the fares on the E.I., but the manipulation in the scales and enhancements produced in other cases an increase of even $33\frac{1}{3}$ per cent.

The effective rate is that for the first distance. As the average leads on most of the railways for the first class passenger are less than 300 miles, and on many even less than 150 miles, the milage for the first step in the distance scales, it may well be that the benefit of reduced fares for longer distances is not secured by the majority of first class passengers.

While the basic fares remained generally as described in the foregoing paragraphs, there were a number of reductions below the basic fares offered in connexion with week-end travel, return fares, holiday concessions, etc., which represented a large volume of first class travel. It is not possible to estimate the effect of these concessions on total earnings. Further,

[7] Namely, the B.B&C.I., E.B., E.I., G.I.P., M&S.M., N.W. and S.I. Railways.

not all the railways were equally generous in the reductions offered. There was also no uniformity in practice. The level of the average receipts per passenger per mile is depressed as compared with the fares as much by those concessions as by the operation of the fares for longer distances on telescopic scales.

The conclusions which emerge from the survey of first class passenger traffic on Class I railways are :

(1) Earnings from first class passengers have suffered so serious a deterioration as to render the prospect of a return to the older levels under normal conditions very remote.

(2) The phenomenal decline in the number of passengers provides important evidence that the first class passenger service is no longer as attractive as it used to be to the travelling public. That the reductions in fares and conçessions during the prosperous years before the depression have had little effect in stimulating travel in that class and have also failed to arrest the deterioration, indubitably proves that the first class has definitely lost its hold on its former patrons.

(3) The higher passenger milage against the decreasing number of passengers and the advancing average leads show that the first class is patronised only by long distance passengers and that short distance passengers have preferred to go either by a lower class or alternative modes of transport.

(4) Average receipts per first class passenger have, after the earlier decreases, risen to relatively higher levels, but the structure of fares has remained almost the same.

SECOND CLASS PASSENGER TRAFFIC

Number of passengers

The second class passenger service comes next to the first in order of cost, comfort and attractiveness. The statistics of second class passenger traffic and earnings are given in Table 41.

The number of passengers travelling by second class was 10·36 millions in 1923-4 and decreased to just under 10 millions in 1924-5. The traffic recovered to 10·39 millions by 1926-7, but gradually declined to 9·35 millions in 1929-30 and 5·25 millions in 1933-4. The bottom was touched at 4·76 millions

TABLE 41. SECOND CLASS PASSENGER TRAFFIC

1. Number of passengers (in millions)

Year	Broad		Metre		Total	
	No.	%	No.	%	No.	%
1923-4	8·63	104	1·67	100	10·36	104
1924-5	8·27	100	1·66	100	9·99	100
1925-6	8·40	102	1·73	104	10·20	102
1926-7	8·57	104	1·75	105	10·39	104
1927-8	8·39	102	1·87	113	10·34	103
1928-9	7·93	96	1·80	108	9·79	98
1929-30	7·61	92	1·68	101	9·35	94
1930-1	6·78	82	1·49	90	8·23	83
1931-2	4·89	59	1·21	73	6·15	62
1932-3	4·32	52	1·15	69	5·50	55
1933-4	4·13	50	1·09	66	5·25	53
1934-5	3·93	48	1·10	66	5·06	51
1935-6	3·84	46	1·08	65	4·96	50
1936-7	3·68	44	1·04	63	4·76	48

2. Passenger miles (in millions)

Year	Broad		Metre		Total	
	No.	%	No.	%	No.	%
1923-4	277·67	99	76·30	101	357·30	99
1924-5	281·26	100	75·86	100	360·07	100
1925-6	289·71	103	79·36	105	371·93	103
1926-7	322·38	115	84·78	112	410·02	114
1927-8	371·41	132	94·03	124	468·52	130
1928-9	356·20	127	93·23	123	452·18	126
1929-30	350·57	125	91·65	121	444·96	124
1930-1	330·04	117	82·36	109	419·92	117
1931-2	273·22	97	72·49	96	347·60	97
1932-3	242·75	87	68·12	90	312·48	87
1933-4	237·06	84	64·15	85	302·84	84
1934-5	236·88	84	63·89	84	302·31	84
1935-6	249·07	89	72·94	96	323·62	90
1936-7	250·57	89	74·71	98	327·17	91

3. Average lead (in miles)

Year	Broad		Metre		Total	
	No.	%	No.	%	No.	%
1923-4	32·2	95	45·8	100	34·5	96
1924-5	34·0	100	45·8	100	36·1	100
1925-6	34·5	101	45·8	100	36·5	101
1926-7	37·6	111	48·5	106	39·4	109
1927-8	44·3	130	50·3	110	45·3	125
1928-9	44·9	132	51·9	113	46·2	128
1929-30	46·1	136	54·7	119	47·6	132
1930-1	48·6	143	55·4	121	50·5	140
1931-2	55·9	164	59·8	131	56·5	157
1932-3	56·2	165	59·4	130	56·8	157
1933-4	57·4	169	59·1	129	57·7	160
1934-5	60·3	177	58·2	127	59·8	166
1935-6	64·8	191	67·5	147	65·3	181
1936-7	68·1	200	71·5	156	68·7	190

4. Earnings (Rs. in crores)

Year	Broad		Metre		Total	
	Rs.	%	Rs.	%	Rs.	%
1923-4	1·47	107	0·46	105	1·95	105
1924-5	1·37	100	0·44	100	1·85	100
1925-6	1·36	99	0·44	100	1·83	99
1926-7	1·36	99	0·43	98	1·82	98
1927-8	1·41	103	0·45	102	1·89	102
1928-9	1·38	100	0·45	102	1·85	100
1929-30	1·31	96	0·44	100	1·77	96
1930-1	1·23	90	0·40	91	1·65	89
1931-2	1·12	82	0·35	80	1·49	81
1932-3	1·08	79	0·33	75	1·43	77
1933-4	1·05	77	0·32	73	1·37	74
1934-5	1·05	77	0·31	70	1·37	74
1935-6	1·08	79	0·31	70	1·41	76
1936-7	1·10	80	0·31	70	1·42	77

The percentages are worked out to three places.

Source : *Railway Board's Reports*, Vol. II.

in 1936-7. In considering these figures, it should be remembered that second class passenger traffic witnessed an abrupt rise during 1923-4. This is borne out by the total figures for all railways since 1911.[8] Taking the figures of all railways commencing from 1911, we find that the number of passengers almost doubled within the space of one year, 1923-4, and this high level as compared with 1922-3 was maintained almost till the close of the prosperous phase of the separation period.[9] Comparing the performance of second class with first, passenger traffic seems to have been better sustained in the former. The number of second class passengers has exceeded, even during the depression, the average of the decade 1911-20. The first class on the contrary has suffered so serious a deterioration that the numerical proportion of the traffic since 1930 has shrunk to smaller dimensions than in 1900; in 1934-5, it was only one-half of the number of passengers in 1911.

Broad gauge railways accounted, as with first class, for the major portion of the second class traffic. They carried 8·27 million passengers in 1924-5, the proportion to the total on Class I railways being 83 per cent. This is about 10 per cent higher than the proportion they had in respect of earnings. During the next three years there was a slight increase. But from 1928-9 onwards the number declined, the losses during the depression being particularly heavy. The percentage decreased to 82 in 1930-1, 50 in 1933-4, and 44 in 1936-7.

Metre gauge railways fared better. Starting with 1·66 million passengers in 1924-5, they enjoyed higher levels of traffic, the peak of 1·87 millions, an increase to 113 in the percentage, being reached in 1927-8. The decrease during the succeeding years brought the percentage down to 101 in 1929-30, after which there was a rapid decline to 63 by 1936-7, a level substantially higher than that on the broad gauge in the same year.

[8] Appendix, Statistical Statement.

[9] A good part of this increase should be ascribed to the inclusion of the season ticket holders under the different classes with effect from 1923-4. There is unfortunately no indication of the extent of the traffic by classes to attempt an estimate of the increase due to this change in statistics.

The trend as regards the number of second class passengers has thus been similar to that referred to in connexion with the first class, but the extent of decrease was less.

Passenger miles and average leads

The passenger miles for second class described an upward curve from 360 millions in 1924-5 to 469 millions in 1927-8. After that year they took a downward course and touched 302 millions in 1934-5. The position with regard to passenger milage is about the same as we found in the case of first class. Until 1931-2 the milage travelled was well above the base, and even in 1934-5 the decrease amounted to only 16 per cent as compared with 49 per cent in the number of passengers. There has, therefore, been much less deterioration as regards second class passenger milage.

Broad gauge railways, as in the other cases, did by far the largest proportion of the total. In 1924-5 they accounted for 281 million passenger miles, or 78 per cent of the total, as compared with only 76 millions or 21 per cent by metre gauge. The percentage variations during succeeding years were almost similar except for the fact that the broad gauge tended to be 3-8 per cent higher prior to 1931, and 1-3 per cent lower thereafter. But in the last two years, 1935-7, there was an improvement on metre gauge railways to just under the basic level.

The character of the recession in the second class passenger milage was the same as that in the first class, but the deterioration in the performance of the former was not so great. In fact, the metre gauge group was only 2 per cent short of its basic level in 1936-7, as regards passenger milage, although it had 37 per cent less passengers. But the broad gauge had 89 per cent of the passenger miles with only 44 per cent of the passengers.

The distances travelled by second class passengers have undoubtedly become longer as may be seen from the statistics of average leads. The average lead per second class passenger showed a uniform and steady increase from 36·1 miles in 1924-5

to 68·7 miles in 1936-7, an increase of 90 per cent. The lead on the broad gauge was lower and stood at 34 miles in 1924-5 and doubled by 1936-7. On the metre gauge the average lead was longer, namely 46 miles in the basic year from which it increased to 72 miles or by 56 per cent in 1936-7. It may be seen from the figures given in Table 41, that the rate of increase in the first six years was approximately doubled during the depression period.

The longer average leads on second class are not altogether a new development for our railways. Examining the average leads during the last quarter century, it is found that the leads started increasing from 1911. From 73 miles in 1911, the lead per second class passenger increased gradually to 107 miles in 1916-7. Then followed a period of decrease to 67 miles in 1922-3. As much longer leads were reached then, the long period movement may be stated to have been more towards a decrease than an increase. But during the thirteen years covered in the present survey, the leads have approximately doubled ; but even this is less than the average length of journey during 1916-7.

Earnings

The earnings from second class amounted to Rs. 1·95 crores in 1923-4, and Rs. 1·85 crores in 1924-5. The trend of earnings during succeeding years was not one of such unrelieved deterioration as from first class. Although the pre-separation year did 5 per cent better and the curve of earnings was downward till 1926-7, there was an increase of 2 per cent in the following year. Since then the percentage declined to 96 in 1929-30, and to 74 in 1933-4. At the end of 1936-7, second class passenger revenues accounted for 77 per cent of the basic figure.

The worsening in receipts, it may be observed, was not of such severity from year to year as that of the first class, and compared with 1924-5 the recession does not, taking the depression into account, appear to be so great. It is only when we focus our attention over a longer range that we discern

that the process of deterioration had in fact started much earlier. As the corresponding figures for Class I railways are not available, the statistics of the performance of all railways may be quoted. There was a gradual increase from 1900 to 1920-1 in earnings from second class. The revenue obtained in 1911 amounted to Rs. 83·83 lakhs, and increased to Rs. 226·49 lakhs in 1920-1. It is not possible from the statistical data available to isolate the increase attributable to the movement of troops and other factors during the war. But since the tendency towards an increase had prevailed throughout, it is safe to presume that a considerable portion of the increase was brought about by normal expansion. The figure touched in 1921-2 was the highest reached. But for the interruption of a slight improvement during 1927-9, the period which followed was one of continued decline for second class earnings.

Broad gauge railways accounted for Rs. 137 lakhs or 74 per cent of the total in 1924-5. The receipts of the metre gauge in that year amounted to Rs. 44 lakhs or 24 per cent of the total. After a short-lived increase there ensued a steady and unvaried decrease in earnings from both groups till 1933-4. There was a tendency to improve during the next three years, but even this was limited to the broad gauge lines. By 1936-7 only certain railways were able to recapture part of the lost revenues, but this was counterbalanced by a further deterioration on others. The percentages given in Table 41 indicate some uniformity as regards the movement of earnings on the two groups, though after 1929-30 the loss on the metre gauge proved larger.

Three facts emerge from the examination of the second class passenger receipts. Firstly, second class betrayed the same tendency towards a decrease as was noticed in first class. Secondly, the rate of decrease is nothing like so steep or rapid as in the receipts from first class, and this is borne out by the fact that even during the worst year of the depression, earnings decreased to only two-thirds of the peak figures of

1921-2, whereas on the first class revenues were almost half the peak figures of 1922-3. Thirdly, the deterioration in earnings, on the whole, was much less than that in the number of passengers, but more than that in the passenger miles.

Average receipts

The average rate per second class passenger per mile was about half that of first class during 1924-37. It was 9·93 pies in 1924-5 as compared with 10·5 pies in 1923-4. There was a gradual decrease to 7·53 pies per mile in 1930-1. It was only during the depression that the rate increased to beyond the level of 8 pies. Between 1931 and 1937, second class fares averaged between 8·22 pies and 8·77 pies per mile.

Second class fares on the broad gauge averaged 10·1 pies per mile in 1923-4, and decreased to 7·16 pies in 1930-1. During the succeeding years there was a rise to 8·55 pies in 1932-3 and then a drop to 8·41 pies over the next four years.

On metre gauge railways the average fare stood at 11·5 pies per mile in 1923-4. As with the broad gauge there was a gradual reduction to 9·24 pies in 1931-2. Despite an increase to 9·46 pies in 1933-4, there was a further decrease to 7·96 pies in 1936-7, the lowest average rate during the entire period.

The average fares on individual railways showed considerable variations. Average receipts per second class passenger per mile in 1924-5 varied from 7·06 pies on the B.B.&C.I. to 12·9 pies on the S.I. on the broad gauge and from 8·18 pies on the N.S. to 13·7 pies on the Jodhpur on the metre gauge. The receipts per passenger in 1929-30 showed a substantial decrease in both groups. After an increase during the first four years of the depression, there were considerable reductions on the metre gauge lines over the next three years. Let us now examine the changes in the basic second class fares.

Second class passenger fares

The structure of second class fares before the last war was similar to that of first class. The maximum and the minimum were laid down by the Government of India within which

the railway administrations were free to fix fares between these limits. The position prior to 1917 and thereafter was as follows :

	Minimum	Maximum	Percentage of max. to min.
Prior to 1917	6 pies	9 pies	150
April 1917	6 ,,	12 ,,	200
1922-3	6 ,,	16 ,,	266⅔

The increases in the maximum introduced in 1917 and 1922-3 had the same effects as on first class. Thus the maximum which was originally 50 per cent higher than the minimum was raised by 100 per cent in 1917 and 166⅔ per cent in 1922-3. The increase extended the limits within which railways could fix fares to more than three times the range allowed under the original system.

Prior to 1917, the fares applied to second class on most railways were simple. Some of them had a uniform rate per mile regardless of distance and charged either the minimum of 6 pies as on the S.I. or the maximum of 9 pies, as on the A.B., Burma and E.B. But most others had two scales, namely, 1—300 miles, and 301 miles and over. The fare for the first distance was usually the maximum or near it; the fare for the second scale was pitched lower, usually the minimum.

When the maximum was raised in 1917 and 1922-3, there were increases in fares. Some railways took full advantage of this to increase their fares to the full extent of the new maximum in 1922, such as the B.B.&C.I., M.&S.M., E.I. and G.I.P. The others kept their fares, or the fares for the first scale, slightly lower.

From 1924 onwards the improvement in the general financial position encouraged railways to consider reductions in fares as already referred to, and by 1929 second class fares and scales reflected a substantial decrease as compared with 1922-3. The reductions took the shape of either a lowering of the fares themselves or in the reduction of the distance for the first scale, or both. In the latter case, the lower fare

started earlier. Thus on the B.B.&C.I. in 1922-3 the fares were 15 pies per mile for 1—300 miles and 9 pies per mile for additional distances. In 1929, the fares became 12 pies for 1—150 miles and 9 pies for additional distances. Concessions on holiday travel were offered on certain railways. Further facilities were given by a revised scale of charges for parcels and baggage, representing a reduction of 15 per cent. Thus during the period 1924-30, there was a tendency towards lower fares on most of the railways. It was also realized that the decrease of income in spite of the increase in the number of passengers was to be attributed mainly to the lowering of fares.

With the commencement of the depression and the consequent decline in earnings, certain adjustments in rates and fares were introduced. A slight enhancement was made and the concessions previously given were partly withdrawn. A general idea of the charges for second class travel during the depression may be formed by comparing the fares in 1935 with those in 1929. On half the Class I railways there were no alterations at all. On the remaining lines an attempt was made to retrieve the losses or arrest further deterioration by manipulation of scales, distances and rates. The scales were abolished in favour of an equal milage rate or vice versa. In some cases the distances were reduced for the first scale. All these adjustments were carried out to check the decline in earnings.

As the average leads have varied over the period within only 70 miles, the effective rate must have been the basic rate applied or the fare for the first distance of the scale where more than one step was introduced. The fact that the average fares have been lower than the basic fares may be explained by the effects of the concessions and reductions allowed on return tickets, etc., and the effects of the telescopic scales on receipts.

It will be seen that second class fares also have been roughly the same from 1924 onwards. The slight adjustments here

and there helped to prevent undue decrease in traffic and earnings from this class. But viewing the situation since 1924, changes in fares can hardly account for the general decline in traffic and earnings. We shall have to seek for the causes of this in factors other than changes in fares or the price of transport.

The conclusions indicated by the examination of second class passenger traffic may be summarized as follows :

(1) Analysis of earnings and average rates and fares suggests that there has been during the period a certain amount of sustained demand for second class passenger services. The deterioration in receipts has been much less than was noticed in first class.

(2) The second class betrays the same tendency as was seen in the first in regard to the number of passengers, which has decreased by more than one-half. But as in the first class again, passenger milage has been much higher as compared with the number of passengers. Thus in regard to traffic, the second class shows a much stronger position than the first, the losses in the number of passengers being almost offset by the increase in passenger miles.

(3) As regards the distance preferences of second class passengers, the increase has been similar to that of the first. The second class also has ceased to hold the same attractions to the short-distance passengers as before.

(4) The prospect of improving second class traffic and earnings appears to be more hopeful than in the case of the first class.

INTER CLASS PASSENGER SERVICE

Number of passengers

The inter class passenger service stands midway between second and third. The volume of inter class traffic during recent years has been about twice that of first and second combined. The number of passengers in 1924-5 was 12·26 millions. There was a rapid increase during the succeeding years which brought the total number to 17·96 millions, raising the percentage to 146 in 1929-30. With the beginning of the depression, there was a sharp decline. By 1931-2 traffic dropped almost to the basic level ; in the following year, the percentage declined to 89. As a result of still further decreases

TABLE 42. INTER CLASS PASSENGER TRAFFIC

1. Number of passengers (in millions)

Year	Broad		Metre		Total	
	No.	%	No.	%	No.	%
1923-4	10·62	94	0·90	99	11·62	95
1924-5	11·24	100	0·91	100	12·26	100
1925-6	12·34	110	1·18	130	13·65	111
1926-7	13·31	118	1·49	164	14·99	122
1927-8	15·46	138	1·75	192	17·43	142
1928-9	15·70	140	1·95	214	17·87	146
1929-30	15·67	139	2·10	231	17·96	146
1930-1	14·37	128	1·67	184	16·20	132
1931-2	10·95	97	1·30	143	12·38	101
1932-3	9·57	85	1·23	135	10·91	89
1933-4	9·24	82	1·28	141	10·64	87
1934-5	9·05	81	1·30	143	10·45	85
1935-6	9·14	81	1·34	147	10·57	86
1936-7	9·57	85	1·56	171	11·23	92

2. Passenger miles (in millions)

Year	Broad		Metre		Total	
	No.	%	No.	%	No.	%
1923-4	471	92	49	98	524	93
1924-5	512	100	50	100	566	100
1925-6	563	110	58	116	615	109
1926-7	594	116	70	140	670	118
1927-8	667	130	80	160	754	133
1928-9	662	129	87	174	756	134
1929-30	656	128	87	174	750	133
1930-1	576	113	72	144	653	115
1931-2	489	96	59	118	552	98
1932-3	453	88	56	112	512	90
1933-4	442	86	56	112	501	89
1934-5	438	86	60	120	501	89
1935-6	435	85	63	126	501	89
1936-7	454	89	72	144	529	93

3. Average lead (in miles)

Year	Broad		Metre		Total	
	No.	%	No.	%	No.	%
1923-4	44·3	97	54·1	99	45·1	98
1924-5	45·5	100	54·8	100	46·2	100
1925-6	44·8	98	49·0	89	45·1	98
1926-7	44·7	98	47·0	86	44·7	97
1927-8	43·2	95	45·5	83	43·2	94
1928-9	42·1	93	44·7	82	42·3	92
1929-30	41·9	92	41·5	76	41·8	90
1930-1	40·1	88	43·0	78	40·3	87
1931-2	44·7	98	45·6	83	44·6	97
1932-3	47·3	104	45·3	83	46·9	102
1933-4	47·8	105	44·1	80	47·1	102
1934-5	48·4	106	45·9	84	47·9	104
1935-6	47·6	105	47·1	86	47·4	103
1936-7	47·5	104	46·1	84	47·1	102

4. Earnings (Rs. in lakhs)

Year	Broad		Metre		Total	
	Rs.	%	Rs.	%	Rs.	%
1923-4	124	95	13	100	139	96
1924-5	130	100	13	100	145	100
1925-6	141	108	14	108	157	108
1926-7	141	108	16	123	159	110
1927-8	147	113	18	138	167	115
1928-9	143	110	19	146	164	113
1929-30	135	104	19	146	156	108
1930-1	121	93	16	123	139	96
1931-2	106	82	14	108	121	83
1932-3	99	76	13	100	113	78
1933-4	96	74	13	100	110	76
1934-5	96	74	13	100	110	76
1935-6	95	73	14	108	110	76
1936-7	97	75	15	115	113	78

The percentages are worked out to three places.

Source : *Railway Board's Reports*, Vol. II.

it came down in 1934-5 to 85. Only in 1936-7 was there a perceptible sign of improvement, as a result of which the percentage rose to 92.

As may be seen from the figures given in Table 42, the bulk of the inter class traffic was handled by broad gauge railways, which had in 1924-5 11·24 million passengers or 92 per cent of the total number for Class I railways. The curves of increase and decrease during the pre-depression and depression periods were similar to those recorded by the total figures. Thus the percentage increased to 139 in 1929-30, after which it dropped to 81 in 1934-6.

Inter class traffic on metre gauge lines was remarkable for the substantial increase recorded during the post-separation period. From less than a million in 1924-5, the number of passengers increased rapidly to 2·10 millions or, to 231 per cent by 1929-30. This phenomenal expansion affected the relative importance of the traffic on this gauge which increased from 7 per cent to 12 per cent of the total for Class I railways. During the depression, the number of passengers was reduced, but even the decrease during 1932-3, the largest during the period on these railways, left the volume of traffic 35 per cent higher than in 1924-5. The next four years witnessed a recovery which raised the percentage to 171. Thus the metre gauge railways disclosed a substantially better record than the broad gauge.

Passenger miles and average leads

The passenger miles done in connexion with inter class passengers rose from 566 millions in 1924-5 to 756 millions in 1928-9, the percentage increasing to 134. In the next year there was a small drop of 6 millions. At the end of the first three years of the depression the decrease amounted to 250 millions and the percentage receded to 89. During 1933-6 there was a slight improvement and the percentage stood at 93 in 1936-7.

The inter class passenger milage done by broad gauge railways amounted to 90 per cent of the total in 1924-5. The increase

during the next four years and the decline during the depression were similar to the movements in the total figures referred to above. The passenger miles on the metre gauge indicated a remarkable increase of 74 per cent during 1928-30. In this respect the transportation done was almost on the same lines as those denoted by the number of passengers in this group. There is to be seen also the same feature of relatively higher levels during the depression, as compared with 1924-5, in spite, however, of a large decrease.

In one respect inter class traffic has differed from first and second classes. Whereas on the latter a higher passenger milage was shown as compared with the total number of passengers, on inter class the tendency has been towards a lower rate of increase. Thus the additional passenger milage amounted in 1929-30 to 33 per cent only as against 46 per cent in the number of passengers. The average leads are accordingly seen to decrease till 1930-1 and to increase only slightly, by 2 to 3 per cent thereafter, a feature that is in marked contrast to the trends in first and second classes. As with the other classes, the increase in the average leads must have occurred through the loss of short distance passengers. The competition of road motor transport is particularly keen in the case of inter and third class passenger traffic ; part of the loss therefore may be held to have been caused through diversion of the traffic. It should be observed that this holds true only with respect to broad gauge railways, as the statistics of metre gauge record a comparative decrease in the average leads as compared with 1924-5. Generally speaking, however, there has been, taking into account the decrease from 1925-6 onwards, a certain amount of steadiness in the leads of the metre gauge traffic in inter class.

Earnings

The trend of earnings from inter class indicates that the general position of the traffic receipts from this source was better than second class. Starting from 1924-5, earnings increased from Rs. 145 lakhs to Rs. 167 lakhs in 1927-8,

or, expressed as a percentage, to 115 which was the highest figure touched during the entire period under review. From the next year onwards there was a decrease, the pace of which was accelerated during the depression. The percentage of receipts declined to 108 in 1929-30 and to 76 in 1933-4. There was no improvement till 1936-7, when it moved to 78.

The comparative levels of earnings on the broad and metre gauges reflected the features referred to already in connexion with the volume of traffic and leads. The receipts on broad gauge were in conformity with the trends of the total figures, but metre gauge lines showed, as might be expected from the additional traffic, substantially better results. Inter class earnings on the metre gauge stood 46 per cent higher during 1928-30. During the depression there was a decrease to the basic figure only. The earnings on metre gauge remained at this level during 1932-5, after which the percentage increased to 108 in 1935-6 and to 115 in 1936-7. Thus while inter class earnings in 1936-7 as compared with 1924-5 were 25 per cent lower on broad gauge, they stood 15 per cent higher on metre gauge railways.

The movement of earnings from inter class appears on the whole to be in accord with prevailing economic trends and this is confirmed by the nature of the recession during the depression period. One may, therefore, take it that the improvement of earnings from this class is only a question of general economic recovery. If we examine inter class earnings over a longer period, we observe a double cycle. From Rs. 95 lakhs in 1910, receipts increased to Rs. 191 lakhs in 1920-1. There was a great decrease during the next two years, when they dropped to Rs. 138 lakhs, but earnings recovered again and increased till 1927-8, followed by the contraction as stated above.

Average rates and passenger fares

The average rate per passenger per mile on inter class was 5·09 pies in 1923-4, the highest during the whole period. The

rate came down during succeeding years until it touched the level of 4 pies in 1929-30. After a slight increase to 4·24 pies in 1932-3, the average rate remained near about that level till 1935-6. In the following year, there was a further decrease to 4·11 pies.

On the broad and metre gauges the average rate per passenger showed much less difference than was noticed in first and second classes. They tended to approach the same level, though the metre gauge stood slightly higher during 1925-36. In 1936-7 the rate was almost the same, namely 4·10 pies on broad gauge as against 4·11 pies on metre gauge.

The structure of inter class fares before and after the last war may be seen from the following figures :

	Minimum	Maximum	Percentage of max. to min.
Prior to 1917	3 pies	4½ pies	150
April 1917	3 ,,	6 ,,	200
1922-3	3 ,,	7½/6 ,,	250/200

* Higher rate for fast train services.

Although the enhancements of the maximum in 1917 and 1922-3 were similar to those in the upper classes, the difference between the maximum and minimum after 1922-3 was slightly less for inter class. Another feature was the differentiation introduced as regards fares by fast and ordinary trains. While the minimum was left as it was, the maximum of 6 pies per mile—the fare as increased in 1917—was retained for the ordinary train service, and a higher maximum fare of 7½ pies per mile was adopted for the fast train services. The difference between the maximum and the minimum was thus increased from 150 to 200/250 per cent. The comparative simplicity of the pre-war basis gave place to a somewhat elaborate scale. In 1913-4, for instance, some railways charged irrespective of distance the maximum fare per mile, or a slightly lower fare. Some railways had two steps in the scale, 1-300 and 301 and over, the fare for the latter being fixed lower than that for the former. The railways took full advantage of the raising of the permissive maximum both in 1917 and

1922-3, and the result was a complex fare structure with a differentiation carried out with regard to the mail (fast) and ordinary (slow) train services and distances. The twofold scales of the first 300 miles and the excess distance appear to have been adopted by more railways. The E.B. had a shorter distance, namely, 150 miles. Some systems in fixing fares disregarded both the distance and the distinction between mail and ordinary trains, such as the M.&S.M. and N.W. The reductions in fares after 1924 took the shape either of a lowering of the basic fare itself for the first distance, or of leaving the fare for the first distance undisturbed and lowering that for the second distance. With these reductions during the post-separation years came a further amplification of the scales. While two steps had become more widely used, some systems introduced a third step by reducing the first or the second distance or both. Thus the N.W. in November 1931 had three steps, 1-50 miles at 5 pies per mile ; 51 to 300 miles at 4½ pies per mile ; and additional distances at 3½ pies per mile.

Concessions such as reduced return fares, week-end travel, etc., referred to in connexion with the upper classes, the luggage allowances, etc., were also introduced for inter class. With the beginning of the depression, there were minor enhancements followed by a slight manipulation of the scales and distances, sometimes to arrest the decline in receipts or to meet road motor competition. But the structure of basic fares remained essentially unaltered.

The average fares must necessarily reflect the effects of these changes in the scales. In view of the differences from railway to railway, concessions and other factors, it is difficult to estimate them from the average figures for Class I railways. As the average lead has been about 47 miles, it may well be taken that here also the fare for the first step has been the effective rate. The fact that there has not been any pronounced tendency during the entire period towards an increase or a decrease such as that observed in first and second classes proves that inter class traffic has, from the point of view of

traffic, been well sustained in spite of the depression and road competition.

The present survey of inter class passenger traffic indicates that:

(1) The number of passengers in inter class showed a remarkable increase till 1929-30. During the depression there was, of course, a decrease, but compared with the traffic of first and second classes, this was far less serious. That decline was only to be expected as a result of lower economic activity and road competition which had developed in the meantime. The fact that the reductions, as compared with 1924-5, amounted to only 15 per cent in the worst year suggests that further increase may be naturally expected with the return of normal conditions.

(2) The trend of passenger milage on inter class shows that while it has not increased to the same extent as the number of passengers during the pre-depression years, it tended to remain slightly higher after 1932-3. The percentage difference is so small that the railways have not, as on the first and second classes, lost heavily in short distance traffic.

(3) This is confirmed by the fact that the average lead per passenger has remained generally stable, thus implying that despite road competition there has been no fundamental change in the character of inter class passenger traffic.

(4) The metre gauge railways have disclosed a striking increase in both the number of passengers and the distance travelled by them, and the levels during the depression period were substantially higher as regards the number of passengers. Even in regard to passenger miles, the improvement has been well maintained.

(5) Making allowance for the decrease in rates, these features were shown in the trend of earnings which was upward till 1929-30. The decrease since then was greater than that indicated by the traffic factors.

(6) The average rate level for inter class was also relatively stable from 1927-8.

The future of inter class in the light of these facts appears to be definitely better than that of first and second class.

THIRD CLASS PASSENGER SERVICE

From the point of view of traffic and revenues, third class, as stated earlier, provides by far the most important class of passenger service. It accounts for about 95 per cent of passenger traffic and 90 per cent of passenger earnings. From the traffic and financial points of view, therefore, third class is virtually synonymous with passenger transportation by

TABLE 43. THIRD CLASS PASSENGER TRAFFIC

	1. Number of passengers (in millions)						2. Passenger miles (in millions)					
	Broad		Metre		Total		Broad		Metre		Total	
Year	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1923-4	334	98	195	100	538	99	11,642	99	5,814	97	17,701	98
1924-5	340	100	195	100	546	100	11,794	100	6,017	100	18,071	100
1925-6	351	103	202	104	564	103	11,904	101	6,248	104	18,416	102
1926-7	352	104	206	106	569	104	11,843	100	6,326	105	18,406	102
1927-8	358	105	217	111	585	107	12,692	108	6,637	110	19,559	108
1928-9	357	105	213	109	580	106	13,100	111	6,585	109	19,915	110
1929-30	366	108	218	112	595	109	13,882	118	6,750	112	20,878	116
1930-1	332	98	198	102	539	99	12,417	105	5,904	98	18,532	103
1931-2	297	87	172	88	476	87	11,050	94	5,126	85	16,348	90
1932-3	296	87	171	88	475	87	10,718	91	5,103	85	15,985	88
1933-4	290	85	163	84	460	84	10,495	89	4,846	81	15,501	86
1934-5	299	88	163	84	470	86	11,004	93	4,938	82	16,104	89
1935-6	302	89	163	84	473	87	11,180	95	5,098	85	16,445	91
1936-7	303	89	166	85	477	87	11,144	94	5,183	86	16,495	91

	3. Average lead (in miles)						4. Earnings (Rs. in crores)					
Year	No.	%	No.	%	No.	%	Rs.	%	Rs.	%	Rs.	%
1923-4	34·8	92	29·8	96	32·9	99	21·05	98	10·15	97	31·73	98
1924-5	37·7	100	30·9	100	33·1	100	21·42	100	10·46	100	32·47	100
1925-6	33·9	90	30·9	100	32·6	98	21·60	101	10·90	104	33·10	102
1926-7	33·6	89	30·7	99	32·4	98	20·69	97	10·68	102	31·90	98
1927-8	35·4	94	30·6	99	33·5	101	21·30	99	11·02	105	32·80	101
1928-9	36·7	97	30·9	100	34·4	104	20·59	96	10·79	103	31·86	98
1929-30	37·9	101	30·9	100	35·1	196	21·09	98	10·87	104	32·46	100
1930-1	37·4	99	29·8	96	34·4	104	18·77	88	9·52	91	28·72	88
1931-2	37·3	99	29·8	96	34·3	104	17·56	82	8·45	81	26·36	81
1932-3	36·2	96	29·8	96	33·7	102	17·59	82	8·57	82	26·50	82
1933-4	36·2	96	29·8	96	33·7	102	16·99	79	7·99	76	25·29	78
1934-5	36·8	98	30·3	98	34·3	104	17·17	80	8·06	77	25·54	79
1935-6	37·0	98	31·3	101	34·8	105	17·30	81	8·07	77	25·67	79
1936-7	36·7	97	31·3	101	34·6	105	17·03	80	8·01	76	25·33	78

Source : *Railway Board's Reports.*

rail itself. Let us now turn to the character of the traffic and earnings from third class during the post-separation period.

Number of passengers

Class I railways carried, in 1924-5, 546 million third class passengers out of a total of 569 millions or 96 per cent. The number showed a steady increase during the next five years and, in 1929-30, was 595 millions, the percentage being 109. This was, in fact, the highest level touched. The decrease with the beginning of the depression is shown by the percentage declining to 99 in 1930-1 and 84 in 1933-4. A slight increase to 87 was recorded in the two years 1935-7.

Broad gauge lines carried 340 million passengers in 1924-5, the proportion to the total on Class I railways being 62 per cent. There was a gradual increase to 366 millions in 1929-30, the percentage as compared with 1924-5 being 108. The decrease during the next four years brought the percentage down to 85. There was only a slight improvement to 89 in 1936-7.

Metre gauge railways in 1924-5 carried 195 million passengers, or 36 per cent of the total number. They had a larger percentage of increase during the pre-depression years. In 1929-30, they carried 218 million passengers, and the percentage was 112. During the depression the decreases on the metre gauge lines appear to have been slightly larger and in 1936-7 they had only 85 per cent of the traffic handled in the basic year.

The relative importance of the traffic handled by broad and metre gauge railways remained generally undisturbed, though a slight increase in the former is to be noticed during the depression. Although the percentage decreases in third class traffic have been substantially less as compared with other classes, in view of the magnitude of the traffic, the actual loss was considerable.

Passenger miles and average leads

The passenger miles of third class travel amounted to 18,071 millions in 1924-5, or 95 per cent of the total

for Class I railways. Expressing the traffic of succeeding years in percentages, there was an increase to 102 by 1925-7, 110 in 1928-9, and 116 per cent in 1929-30. From 1930-1 onwards there was a decline similar to that noticed in the number of passengers to 90 in 1931-2 and 86 in 1933-4. The improvement in the next three years raised the percentage to 91 in 1935-6, which was maintained in the following year.

The passenger milage on broad and metre gauges had approximately the same proportions as were seen in regard to the number of passengers. In 1924-5, the broad gauge accounted for 65 per cent and the metre gauge for 33 per cent of the total for Class I railways. The increase during the first six years and the subsequent decrease during the depression on the broad gauge showed the same trends as the total figures, but the percentages were slightly higher. Thus the percentage of passenger miles during 1929-30 was 118 and during 1936-7, 94. Metre gauge railways, on the other hand, had lower levels both in regard to the pre-depression increase and the recession during the depression, namely 112 in 1929-30 and 81 in 1933-4.

Comparison of the percentages relating to the number of third class passengers and passenger miles shows that the position with regard to the latter was somewhat better. Generally speaking, the total figures disclose that the increase was greater before 1930 and the decrease less thereafter, in passenger milage, a tendency which was found in an accentuated form in the first and second classes. In the third class, of course, the difference is indeed much less, and the reason is to be found in the slightly increased leads.

The average leads per third class passenger increased from 33·1 miles in 1924-5 to 35·1 miles in 1929-30. During the depression, the leads varied from 33·7 to 34·8 miles. The broad gauge had longer leads, which increased from 37·7 miles in 1924-5 to 37·9 miles in 1929-30. In spite of a tendency to a decline, the average distance on the broad gauge was only 1 to 3 per cent lower during the period 1931-7. The metre gauge

showed a comparatively lower level of average leads, which stood at 30·9 miles in 1924-5, but fluctuated between 29·8 to 31·3 miles during the entire period.

The average lead per third class passenger thus indicates a feature which is different from that observed in other classes. The leads have been more stable and have remained approximately at 34 miles. Third class passenger traffic does not, therefore, appear to have fared so badly during the depression as other classes. Even in the worst year for this class since 1920-1, namely, 1933-4, the record has been well above the highest figures touched in the previous decade 1911-20.

Earnings

The earnings from third class passenger traffic amounted to Rs. 32·47 crores in 1924-5. During the next five years, the percentage of revenues fluctuated between 98 and 102. In 1929-30, third class receipts were just below the basic level. In the following year there was a large decrease to 88 and by 1933-4 to 78. There was only a very slight improvement during the next two years.

Broad gauge lines accounted for about two-thirds of the third class passenger receipts and metre gauge had just under a third. Thus, in 1924-5 out of a total passenger income of Rs. 32·47 crores, the former had Rs. 21·42 crores and the latter Rs. 10·46 crores. The receipts on broad gauge railways showed a slight decrease during the pre-depression period, while metre gauge lines had an increase of 2 to 5 per cent. During the depression there was a rapid decrease somewhat similar to that observed in the total figures. The metre gauge railways showed a tendency towards greater deterioration.

As the earnings from third class passenger traffic reflect the effects of changes in fares, we may now turn to the average fares per passenger per mile and changes in the basic fares charged.

Average rates and passenger fares

The average rate per passenger per mile in 1924-5 was 3·45 pies, which represents the highest level reached since

1923. There was a gradual decrease to 2·99 pies in 1929-30, or of 13 per cent. After remaining at this level during 1930-1, there was a rise to 3·18 pies in 1932-3, followed by a decrease during succeeding years. In 1936-7, the average rate came down to 2·95 pies.

The average rate on broad gauge was slightly higher till 1927-8, but from 1928-9 onwards there was a pronounced decrease. As a result of this the average rate stood definitely lower than that on metre gauge. The average rate during 1936-7 represented on both the gauges almost the lowest rate since 1923.

The structure of third class fares has undergone important changes since the last war. The character of the changes may be seen from the following figures :

	Minimum	Maximum	Percentage of max. to min.
Prior to 1917	$1\frac{1}{2}$ pies	3 pies	100
April 1917	$1\frac{1}{2}$,,	4* ,,	$266\frac{2}{3}$
1922-3	$1\frac{1}{2}$,,	5/4† ,,	$333\frac{1}{3}/266\frac{2}{3}$

* Mails and fast passenger trains only.
† The higher rate for mails and fast passenger trains.

Before the war the third class fare structure was quite a simple scale and on many railways the fares were the same for all classes of trains and in some cases for all distances. The maximum for third class was, as may be noticed, pitched higher than the percentage difference adopted for other classes, namely, twice the minimum. The enhancements in 1917 introduced a differentiation between the 'mail and fast passenger' trains and 'ordinary' trains, and fixed the maximum of 4 pies per mile for the former. Thus, while the maxima for the first three classes were raised to twice the minima, the increase in the maximum for third class amounted to $2\frac{2}{3}$ times the minimum. The further enhancements of 1922-3 made the differentiation between the ordinary and fast services a permanent feature, and increased the difference between the minimum and maximum. The maximum for fast train services was fixed at $3\frac{1}{3}$ times the minimum, while that for ordinary services

was fixed at $2\frac{2}{3}$ times the minimum. Thus the percentage increase in the maximum fares for third class was the highest.

The adoption of higher rates for mail and express passenger services was followed by the introduction of telescopic scales on most railways. In a few cases the telescopic basis was further elaborated from two or three to four steps in the scale. Thus on the East Indian, the steps as revised during 1926-7, were as follows :

1— 50 miles	5 pies per mile
51—300 ,,	4 ,, ,, ,,
301—600 ,,	$2\frac{1}{2}$,, ,, ,,
601 and over	2 .. .. ..

As third class provides over 90 per cent of the traffic and earnings the changes in basic fares may be examined more closely. The first step in the telescopic scale is not less than 50 miles and the average lead for third class passengers varies only from 33 to 36 miles. The telescopic scale does not, therefore, affect the bulk of the traffic. A comparison of the charges on some Class I railways for the first fifty miles since 1910 is interesting.

(*Pies per mile per passenger*)

	1910	1917	1922	1935	Percentage increase over 1910
B.B.&C.I. (B.G.)	2·25	3·0	3·25	4·5/3·75	200/167
(M.G.)	2·0	2·5	3·25	4·5/3·75	225/189
B.N.	2·0	3·0	3·5	4·5	250
E.B.	2·5	3·0	3·5	3·5	140
E.I.	2·5	3·0	3·0	3·5	140
G.I.P.	2·5	3·0	4·0	4·0	160
M.&S.M.	2·0	2·5	3·5	4·5/4·0	225/200
N.W.	2·25	3·0	3·5	3·0	133
S.I.	2·0	2·5	3·75	3·5	175

The enhancements during twenty-five years in the basic third class fare represents an increase of 40 to 150 per cent. Considering the changes in the value of money, wage scales and standards of living during the period, the increase probably does not exert an unfair imposition on third class passengers.

It is not possible to distinguish the effects of the reductions and telescopic scales on third class traffic and leads. The

statistics of average leads do not disclose any great change in spite of the telescopic scales. The increase in the suburban traffic near the larger cities during recent years would in any case tend to obscure the effects of longer leads. An even more seriously disturbing factor during the last decade has been road motor competition which has caused a diversion of short distance traffic. The effects of these factors combined with the influence of general economic conditions are probably more important to third class traffic and receipts than mere changes in rates and fares.

The foregoing study of third class passenger traffic and receipts indicates that :

(1) The number of third class passengers showed a substantial increase during the pre-depression period, particularly on metre gauge lines. The increase was not so great as in inter, but in view of the magnitude of the traffic handled, even the moderate increase implied a large volume of traffic. During the depression, except for one year, 1933-4, the number of passengers stood 13 per cent less than in the basic year. Taking the effects of the depressed economic conditions and road motor competition into consideration, it seems safe to state that the record is not on the whole discouraging : in fact it proves the stability of third class passenger traffic.

(2) This is confirmed by passenger milage statistics, the percentages of which have moved with those of the passengers, thus proving that there has not been any fundamental change regarding the distance preferences of third class passengers. This is again confirmed by the average leads, which show an increase of only 6 per cent during the entire period.

(3) The earnings from third class passengers indicate only a slight change, within a range of 2 per cent on either side of the basic figure till 1929-30. The main reasons why the receipts from third class did not respond to the increase in traffic are to be found in the large reductions in fares introduced during the years immediately preceding the beginning of the depression. The fact that the rates were left in the main undisturbed in the face of declining traffic accounts for the comparatively lower levels of income as compared with traffic.

(4) The average rate level was relatively stable during the period 1927-34, after which there has been a tendency towards a further decrease due in part to increased leads.

The survey of passenger traffic and earnings attempted in the preceding pages reveals certain remarkable divergences

in passenger transportation on Indian railways. The tendencies disclosed by the statistics of traffic and earnings of the four classes during 1924-37 already foreshadow significant changes in the character of the transport demand. That they are calculated to modify profoundly the rail passenger service in the immediate future appears to be certain. Before concluding this chapter, we may refer briefly to the character of these developments and the probable outcome that may have to be faced. These are grouped under three heads: the future of upper class passenger service; the problem of inter class; and the cost of rail travel in India.

UPPER CLASS PASSENGER SERVICE

The story told by the traffic and financial results on first and second classes in the preceding paragraphs discloses a rapidly contracting spiral. The decline in receipts and traffic was especially severe on the first. The statistics indicated that short distance passengers had decreased considerably. It is the short distance passenger who in normal times contributes the largest proportion of profit from passenger transportation. Under the telescopic scales the short distance passenger pays more in proportion to the distance he travels. In view of the limited length of his journeys, he does not take up as much accommodation as the long distance passenger, thus enabling the railway to earn more for the space provided. The trends of traffic during the last fifteen years indicate that it is precisely here that the railways have been seriously affected. The decrease in short distance passengers is brought out clearly in the zone statistics of the East Indian Railway, reproduced in Table 44.

It may be observed that the passengers travelling up to 50 miles accounted in 1926-7 for nearly one half the total number in first class, and more than two-thirds in second class. Whereas the decrease for the longer distances in the succeeding years has been comparatively limited, that for the first 50 miles has been considerable. It is for this distance that the competition of the private automobile and buses has

TABLE 44. NUMBER OF UPPER CLASS PASSENGERS ON THE E.I.

(In thousands)

	First class			Second class		
Distance	1926-7	1929-30	1936-7	1926-7	1929-30	1936-7
1—50	47·03	40·59	26·75	427·71	370·80	234·66
51—100	8·75	11·51	6·06	46·25	56·17	37·09
101—150	10·23	11·30	6·22	37·34	41·24	29·44
151—200	6·75	6·34	5·14	21·99	23·76	22·19
201—250	3·18	3·00	2·03	16·32	16·81	12·96
251—300	3·62	4·15	2·73	11·01	14·76	11·87
301—400	7·91	6·33	4·58	24·56	24·26	17·85
401—500		2·12	1·27		12·88	6·87
501—600	3·22	5·03	5·09	5·35	9·37	6·39
601 & over	8·96	9·71	7·79	21·18	27·83	24·61
TOTAL	99·64	100·07	67·66	611·72	597·88	403·94

been most effective. The class of patrons who used to travel formerly by the upper classes are now largely those who can afford to own private cars of their own, which on short distances have proved superior to rail travel in point of convenience, flexibility and cheapness. This fact has to be recognized. The railways can no longer look forward to the return of earlier levels of upper class traffic.

In the light of these considerations, the future of the two classes appears to be uncertain. Maintenance of these two classes is seriously jeopardized by the attenuation of both traffic and revenues. It is, therefore, necessary to consider what prospects the operation of the upper class passenger services has in the near future and whether their retention is economically justified.

As the unit of operation is the train, we may first of all examine the number of passengers in first and second classes per train during the period. The average number of passengers per train stood as shown in the following table.

PASSENGERS PER TRAIN IN FIRST AND SECOND CLASSES

Year	First class	Second class	Year	First class	Second class
1924-5	1·3	4·5	1931-2	0.96	3·6
1925-6	1·3	4·4	1932-3	0·9	3·3
1926-7	1·3	4·6	1933-4	0·8	3·2
1927-8	1·4	5·0	1934-5	0·8	3·1
1928-9	1·3	4·6	1935-6	0·8	3·2
1929-30	1·2	4·3	1936-7	0·8	3·2
1930-1	1·0	4·0			

It may be seen from these figures that there was a general decrease in the average number of passengers per train in both classes. The decline has been greater in first, having dropped from 1·3 to 0·8, and from 4·5 to 3·2 in second. During the thirteen years, 1924-37, there has thus been a decrease of 38 per cent in first and 29 per cent in second. Taking the average figures per train, it is clear that for every four trains carrying one first class passenger, one travels empty. This has, however, to be considered in relation to the increased train milage relative to the traffic, introduced in response to demands for additional accommodation and complaints of overcrowding in the lower classes. But the decrease in the number of passengers has been greater than that attributable to a mere increase in the number of trains run.

The effect of the decrease in the average passenger load on the remunerativeness of the upper class passenger service is brought out clearly by the earnings per seat. The average receipts per seat in first and second classes were as follows :

EARNINGS PER SEAT

	First class			Second class		
	1924-5	1929-30	1936-7	1924-5	1929-30	1936-7
Broad gauge	Rs. 422	345	281	329	344	255
Metre gauge	Rs. 239	200	122	340	315	222

Compared with first, second class seems to be a better revenue producer to the railway. Thus the average receipts per seat in second class on the metre gauge have been very much higher than in first. Even on broad gauge the difference has been reduced to a small figure. The average earnings per first class seat as compared with second class on the broad gauge were almost the same in 1929-30 and about 10 per cent higher in 1936-7. It may be questioned whether it is worth while maintaining an expensive and luxurious first class passenger service for so small an amount of extra revenue.

Probably a better result might have been obtained if the equipment maintained had some relation to the volume of traffic. The steep decline in both traffic and earnings has not until recently had any influence on the seating

accommodation provided. Expressing first and second class accommodation in terms of the number of seats, the position during the period 1924-37 is shown by the figures quoted below.

TABLE 45. PROVISION OF UPPER CLASS SEATS COMPARED TO TRAFFIC

(1924-5=100)

FIRST CLASS

	Broad gauge		Metre gauge	
Year	No. of passengers	Seats	No. of passengers	Seats
1925-6	93	101	98	101
1926-7	92	105	98	102
1927-8	89	103	94	100
1928-9	83	106	85	102
1929-30	73	106	77	105
1930-1	61	112	68	107
1931-2	46	116	56	110
1932-3	39	115	51	110
1933-4	37	113	50	109
1934-5	37	111	50	108
1935-6	36	107	47	108
1936-7	36	105	51	115

SECOND CLASS

	Broad gauge		Metre gauge	
Year	No. of passengers	Seats	No. of passengers	Seats
1925-6	102	102	104	103
1926-7	104	101	105	106
1927-8	102	94	113	103
1928-9	96	94	108	106
1929-30	92	92	101	108
1930-1	82	97	90	113
1931-2	59	109	73	115
1932-3	52	109	69	114
1933-4	50	110	66	115
1934-5	48	108	66	114
1935-6	46	107	65	117
1936-7	44	104	63	108

The comparison between the number of passengers in each class and the accommodation provided shows that there has been an increasing disparity between demand for, and supply of, upper class accommodation. This is to be noticed in the pre-depression year itself. In 1929-30 as compared with 1924-5, for instance, as against a decrease of 27 per cent in the number

of first class passengers on the broad gauge, the seating capacity increased by 6 per cent. By 1936-7, when the passengers had decreased by 64 per cent the seats provided stood 5 per cent higher than in 1924-5. The difference between the equipment and the traffic was even greater during the period 1930-5. It is, of course, not possible to effect a prompt adjustment of the supply of accommodation to every change in the volume of traffic. The addition of coaching stock or its reduction takes time. While, therefore, the situation during individual years may disclose a lack of adjustment, there should, over a series of years, surely be a tendency towards an approximation. Thus considered, the percentages of the number of passengers and the seating capacity on the two upper classes indicate that the decline in traffic has had little effect on the latter. There appears to be no justification for permitting so large a disparity to continue. The Wedgwood Committee in their report stated :

> 'We cannot help feeling that the whole question of upper class accommodation should be reviewed. The volume of first and second class traffic is small and has been diminishing rapidly : and this tendency, so far as we can learn, is likely to continue.... there is room for a reduction of upper class accommodation, and we recommend that this potential economy should be fully investigated. We also recommend that the possibility of combining first and second class accommodation, and of establishing a single upper class on all trains, should receive the special attention of the Railway Board.'[10]

An attempt to reduce the number of seats provided has been in evidence only during recent years, but the decrease effected was too small to affect the capacity left unutilized through the decline of passenger traffic. War-time increases in traffic have for the time being postponed further pursuit of the matter.

The question as to whether the upper class passenger service has been remunerative or not cannot be answered without an examination of the costs of providing it. Unfortunately the accounts relating to carriage accommodation are not

[10] *Wedgwood Committee Report*, para 71, p. 41.

maintained on the basis of classes. The adoption of composite construction during recent years makes it difficult to distinguish the proportionate cost of the upper classes. But surely such information is essential to check whether the service pays for itself? According to a very approximate estimate based on the available seats and estimated costs of broad gauge coaches of uniform class, the earnings per seat during 1936-7 were stated to be 11 per cent for first class; 16½ per cent for second class; and 80 per cent for third class. [11] If instead of capital outlay per seat, the estimated annual interest, depreciation and maintenance costs per seat are taken, the earnings per seat during 1936-7, expressed as a percentage of such costs, were 112 per cent for first, 167 per cent for second, and 887 per cent for third. These figures indicate that earnings have not been less than the costs thus computed. But the full costs of the upper class passenger service do not appear to have been included. There are other items such as the proportionate expense of transportation, the cost of amenities provided throughout the line, such as comfortable waiting rooms, refreshment rooms, dining cars and other facilities. When the full financial costs attributable to the upper classes are taken into account, it is doubtful if upper class passenger traffic, especially first class, pays for itself.

In the absence of adequate data it is impossible to pronounce judgement on the financial results to railways from the operation of first and second class services. Even taking the estimated figures as to the cost of interest, maintenance and depreciation alone for first class, there would appear to be a net gain to the railways if first class is abolished through a reduction in the fixed charges on this account. Quite apart from this gain there are other definite advantages to be secured from the reduction of classes. Thus the elimination of first class would lead to a decrease in the weight of trains and a

[11] Answer to question No. 644 by Hon. A. G. Clow, *Legislative Assembly Debates*, Vol. V, No. 4, p. 1323, 1938.

corresponding decrease in coal consumption, additional accommodation for lower classes, etc. Savings are likely to accrue from ticket inspection to prevent passengers travelling in a higher class, restaurant cars, waiting rooms, refreshment rooms ; reduction in clerical labour and accounting, in time lost by trains drawing up twice at stations, avoidance of the necessity for lengthening platforms, reduction in time occupied in marshalling trains, reduction in stocks of carriage equipment etc.[12]

The case for decreasing the number of classes of passenger service on Indian railways has been gaining ground. Several railway administrations have already abolished first class on branch lines, and in some instances, both first and second classes have been eliminated.[13] The process is likely to continue and *pro tanto* relieve railways from the waste unavoidable in the present system of operating two upper classes of passenger transportation.

THE PROBLEM OF INTER CLASS

There has been some hesitation on the part of Indian railways to adopt intermediate class for regular passenger services. Even now certain railway administrations, such as the S.I.(B.G.) and the N.S., do not maintain this class. From the operating standpoint, there are undoubted advantages in favour of a reduction in the number of classes. A smaller number conduces to greater simplicity and smoother working. A writer, who has advocated the abolition of the inter class since 1903, has recently expressed himself as follows :

'Setting aside various economies similar to those mentioned on British lines, when the second class was scrapped, imagine what it means to a busy booking clerk having four sets of tickets to issue, four lists of fares to consult and four separate accounts to keep. And similar duplication goes on in the Audit and Printing Departments and everywhere else. Then picture for a moment what a help it would be to ignorant, illiterate passengers

[12] *Railway Gazette*, 12 July 1935, article entitled : 'Would it pay to abolish first class'.

[13] *Railway Board's Report* 1938-9, p. 75. On the Class I railways, excluding Mysore Railways, there was a reduction of 374 seats in 1937-8 and of 1,473 seats on first class in 1938-9.

whose time and temper are tried to the utmost in endeavouring to distinguish between intermediate and third class carriages on crowded trains, especially at night time. At present scarcely any one of them knows where to get in. Surely it would be an immense assistance if either of the two classes did not exist.'[14]

While the case for simplification of the classes rests on strong grounds, the survey of the traffic and earnings from inter class does not appear to justify its total abolition. Inter class traffic has shown a better response to changing conditions. This class has proved itself admirably suited to the requirements of that stratum of the travelling public whose standards of living are above the lowest. Firstly, the interposition of this class tends to reduce the loss arising from second class passengers travelling by the next lower class. Secondly, it may also help to attract passengers from third class who may find second too expensive. It is this social group which may be expected to react strongly to every improvement in economic conditions in this country. Thirdly, with the elimination of the first class, the reduction of the number of classes from four to three will effect the same degree of simplification, but with decidedly better financial results to railways. Finally, the retention of inter class is likely to assist railways to compete more successfully with the increasing road competition. A substantial proportion of the travelling public who have been diverted to the roads would be induced to travel by rail, if travel by the latter is made more attractive. The installation of fans during the hot weather, better service at stations and improved amenities to passengers may render inter class more attractive to the public even at a charge slightly higher than third. The problem of effective competition with the roads and increased passenger income is essentially one of retaining the present third class traffic and coaxing it to travel by a

[14] George Huddleston, *History of the East Indian Railway*, (Part II), 1939, p. 38. Mr. Huddleston's further remarks are to the point : 'It should also be remembered when talking of three or even four classes, that it is not unusual to find on some Indian trains, refreshment cars for Europeans, besides separate compartments for Hindu and Moslem refreshments, postal vans, ice vendors, compartments for women only, private saloons for high officials of Government, big Indian potentates or railway officials. In a word an Indian train is generally a conglomeration of vehicles mixed up anyhow, why not then do something material to simplify it ?' P.39.

superior class at higher fares. The class which offers great possibilities in this respect is inter.

STATE MANAGEMENT AND PASSENGER FARES

We may now refer to the view generally held by many in India that passenger fares will tend to be lower under state management, as Government, not subject to the temptation of maximising profits, will be more inclined to follow a policy of cheaper fares. The expectation of lower cost of travel was certainly behind the demand for state management after the last war. It is interesting to consider how far this hope was justified during the post-separation periods. Taking the four state-managed and four company-managed broad gauge lines as two groups, the average rate per passenger per mile for the four classes of passenger service compared as shown in Table 46.

TABLE 46. TREND OF AVERAGE FARES ON STATE-MANAGED AND COMPANY-MANAGED RAILWAYS

(BROAD GAUGE)

(*Per passenger per mile*)

1924-5=100

	State-managed					Company-managed				
	1924-5	1929-30	1936-7	Percentages		1924-5	1929-30	1936-7	Percentages	
	(In pies)			1929-30	1936-7	(In pies)			1929-30	1936-7
First	21.0	14.8	17.0	70	81	22.1	18.7	19.4	85	88
Second	9.99	7.49	8.68	75	87	10.23	8.84	8.81	86	86
Inter	5.27	4.27	4.38	81	83	4.42	4.81	4.65	109	105
Third	3.52	2.94	2.91	84	83	3.63	3.25	3.25	90	90

Average rates on the state-managed lines in 1924-5 were definitely lower for all classes except the inter, as compared with the company-managed lines. The general reductions during the next six years brought down the average rates in both the groups, but the difference in the percentages indicates that the state-managed systems were more generous to the public. The increase in inter class rates on the company-managed railways is significant, and is not entirely due to increased suburban traffic. In 1936-7, except for the increases under the upper classes, the average rates presented essentially the same picture. It is, of course, not fair to argue

on the basis of average rates alone without taking into account the differences in the cost of operation on individual systems, the density of traffic, new factors such as a large increase in suburban traffic, etc. But the average figures disclose a trend so definite as to justify public expectation of cheaper fares under state management.

COST OF RAIL TRAVEL

It is commonly held that third class passenger fares on Indian railways are the lowest in the world. Comparing the average fares in India with those charged in other countries, Indian railways certainly show, with the exception of the Japanese railways, the lowest rate of earnings per passenger per mile. The average fares for passenger journeys in certain foreign railways, converted into Indian money, are given in the following table.

COMPARATIVE STATISTICS OF AVERAGE FARES PER PASSENGER PER MILE*

Railways	Year	Average rate per mile (in pies)
Canadian railways	1935	11·4
Canadian Pacific	,,	11·3
United States railways	,,	10·1
German railways	,,	8·4
New South Wales	1934-5	7·6
Victorian : Suburban	1935-6	6·9
Country	,,	10·8
Japanese railways	,,	2·5
Indian railways, Class I	,,	3·25

* Figures taken from official sources and converted at par.

It should be borne in mind that the bases of charging fares in other countries differ. No other country has four classes, and even the three classes which some countries have are gradually being reduced to two. On British railways, second class is almost eliminated and the standard fares converted into Indian money at par are 26·6 pies per mile for first class and 16 pies for third. The basic fares for the different classes of passenger service in certain foreign countries, converted into Indian currency at par, are shown in the Table 47.

These figures, however, do not indicate the actual fares which are in many cases lower, even substantially lower. Thus, in Great Britain, prior to the war-time restrictions since 1939, except in the case of single journeys, the number of tickets issued at the standard fares is considered small, and the majority

TABLE 47. BASES OF PASSENGER FARES ON FOREIGN RAILWAY SYSTEMS*

Railways	(Pies per passenger per mile) First	Second		Third
Great Britain :				
L.N.E.R.	26·7	..		16·0
G.W.R.	26·7	..		16·0
Canada :				
Canadian Pacific :				
East of Rockies	18·1	15·7		..
West of Rockies	20·9	18·1		..
France :				
P.L.M : Basis	15·0	10·0		6·6
Tax	10·6	6·6		4·0
State : Basis	15·0	10·0		6·6
Tax	5·0	4·3		3·6
German State	17·6	11·7		8·9
Swedish Govt. :				
Ordinary trains	26·3	12·4		7·3
Supplement for Express etc.	38·7	15·8		7·6
New Zealand (Average)	16·0	10·7		..
South Australian :		Single	Return	Excursion
Metropolitan	125% of Second	5·65	8·53	6·4
Country	,,	16·9	25·4	19·1

* The fares taken for this table, from official sources refer to the years 1934-5 for all railways with the exception of the New Zealand railways for which 1935-6 figures have been used.

of passengers, probably 90 per cent, used the 'cheap fare facilities.' The monthly return tickets which were largely in use, in fact to the extent of replacing the standard fares, were issued between any two stations in Great Britain (with a few exceptions) and available outward and return for one calendar month. The basis of fares for these tickets was a single fare and a third for the return journey, that is, 1*d* per mile for third class and 50 per cent more, that is, 1½*d* per mile, for first class. In the majority of cases, the minima of 3*s*-9*d* first class and 2*s*-6*d* third class were applied. There were also a large number of other concessions offered for passenger travel, such

as reduced fares for tourists, circular tours, week-end and night travel, bargain travel on Sundays, anglers' day tickets, ramblers' return tickets, walking tours, family removal, 'day and half day' excursions, season tickets, quantity discounts for pleasure parties, camping parties, etc. Such facilities are common on most foreign railway systems also and the general bases quoted above are practically the maximum as distinguished from the actual fares charged. These reductions have the effect of bringing down the fares the ordinary passenger is called upon to pay to much lower levels than the basic fares.

Compared with foreign railways, the bases of passenger fares in India are certainly lower. But allowance has to be made for the differences in the comforts provided, the average *per capita* income, the standards of life, etc. The statistics of national income, *per capita* travel, and *per capita* expenditure on travel given in the following table indicate that there are considerable differences between the conditions in India and other countries. The statistics are not strictly comparable owing to the differences in the periods covered by them, fluctuations in the exchange rates and other disturbing factors. But they do offer an approximate index to the capacity of the average person in the various countries to pay for travel and

TABLE 48. NATIONAL INCOME, *PER CAPITA* TRAVEL AND EXPENDITURE ON RAIL TRAVEL IN CERTAIN COUNTRIES

Country	National income* Rs.		*Per capita* travel (in miles)	*Per capita* expenditure on travel Rs.†	Year
Gr. Britain	1,013	(1931)	..	20·6	1931
France	550	(1928)	430	9·2	1931
Germany	520	(1925)	287	12·4	1933
Italy	320	(1927)	..	4·7	1931
U.S.A.	1,190	(1932)	130	8·3	1933
Canada	1,268	(1930)	169	21·4	1931
Australia	1,306	(1924)	..	26·2	1933
S. Africa	..	..	..	9·5	1931
Japan	271	(1928)	240	7·4	1930
India	66⅔	(1931)	49	0·98	1933

* Figures for Canada and Japan from Sir M. Visvesvarayya, *Planned Economy for India*, 1936, and for other countries from Jather and Beri, *Indian Economics*, Vol. II, 1941, p. 145.

† These figures have been converted at the current rates of exchange in the year relating thereto.

the enormous difference in that capacity between the travelling public in India and other countries.

Indian railways under normal conditions offer reduced fares to certain classes of passenger traffic, such as to athletes, entertainment parties, circus troupes, students, etc. But their influence in stimulating traffic appears to be limited, as the traffic so far developed has been only of an occasional or sporadic character. Somewhat more important are the effects of reductions in fares for travel in connexion with socio-religious festivals during the Durga Puja, Dewali, Christmas, New Year and Easter holidays. They have induced increased travel and brought to railways additional earnings. Indian railways have only recently endeavoured to adopt a bolder and more enterprising policy. In a country of the extent of India, full of places of pilgrim and historical interest, there is vast scope for developing new traffic. A properly planned and comprehensive campaign is bound to extend the passenger travel market in India very considerably. The essentials of such a program, well-known in other industries, have thus been formulated by Mr. Joseph B. Eastman, as Federal Co-ordinator of Transportation :

> 'First, present service demands of the market are thoroughly explored and classified, and future demands anticipated ; next, the prices which a customer, *who does not have to buy*, is willing to pay are carefully ascertained ; then a type of service filling each demand and within the price limitation is designed ; and finally, and by no means least, this service is sold through an intelligent and planned method of sales promotion.'[15]

One of the encouraging signs of recent years is the attempt on the part of most of our railways to break away from the beaten track, which was good enough when railways had a virtual monopoly of inland transport. Our railways have gradually come to appreciate the importance of a more forward policy. Thus, during 1930-9 conducted tours, introduction of 'travel-where-you-like' season tickets in specified zones, cheap return and week-end return tickets, etc., were attempted as

[15] *Passenger Traffic Report,* Vol. I, p. 22.

a regular feature on most railways. These, however, are not adequate, if our railways want to exploit the vast reservoir of dormant traffic in those who have no need, but might be induced, to travel. Private enterprise has contributed a great deal to the promotion of the travel habit in other countries. The names of Messrs. Thos. Cook & Sons Ltd. and the American Express Company have been synonymous with travel itself —travel anywhere in the world and by any means of transport by road, rail, sea or air. The development of such undertakings devoted to the promotion of travel in India are indispensable if the railways are to reach every class of public who might be persuaded to travel. It is only through such means that Indian railways can hope to exploit to the fullest extent the potential traffic available and awaiting to be tapped. State initiative and encouragement, which have been so valuable in this respect in several foreign countries will undoubtedly help to develop similar enterprises in India.

CHAPTER V

GOODS TRANSPORTATION

INDIAN railways, as indicated in the last chapter, derive about 60 per cent of their total income from goods traffic, or approximately one-and-a-half times as much as the passenger income. From the revenue-earning point of view, freight transportation, therefore, is even more important than passenger traffic.

The story of goods traffic during the present century is one of steady expansion in earnings, tonnage and haul. The trend of earnings was towards a progressive increase. From Rs. 20·37 crores in 1900, goods traffic receipts advanced to Rs. 28·12 crores in 1909. The next two decades witnessed a continuous rise. By 1916-7 freight revenues, as compared with 1900, were more than doubled; and by 1924-5, more than trebled. The high water mark for goods earnings was touched in 1928-9 at Rs. 71·16 crores, which, expressed as a percentage of the receipts in 1900, amounted to 349. From the next year onwards, as may be seen from Table 49, the decrease started, and earnings stated as a percentage declined to 338. With the depression starting in 1930-1, came a sudden drop, which by 1932-3—the worst year for goods traffic—lowered the percentage to 279. The improvement in the succeeding years raised it almost to earlier levels, and in 1936-7 the percentage returned to 343. The fact that freight revenues recovered so rapidly to former levels and that, despite the intensity of the depression in all phases of industry and trade

in this country and abroad, receipts stood high as compared with the preceding decade, provides a significant index of the stability of goods traffic earnings on Indian railways.

The almost unbroken record of increasing receipts from goods traffic till 1928-9 could not have been produced without a corresponding increase in freight transportation, that is, in the amount of goods carried and the distances covered. The volume and distance are indicated by the 'net tons' of traffic and the length of haul. The tonnage of freight handled, ton milage, average haul per ton of goods and average rate per ton of goods per mile on all Indian railways since 1900 are given in Table 49. As net ton miles provide a better measure of the transportation effort than any of the other units, the record presented by the statistics of working under

TABLE 49. STATISTICS OF FREIGHT TRANSPORTATION ON ALL RAILWAYS*

Year	Earnings (crores) Rs.	%	Net tons (millions)	%	Net ton miles (millions)	%	Average haul	Average rate (in pies)
1900	20·37	100	42·90	100	7,132	100	155	5·88
1909	28·12	138	60·90	142	9,340	131	153	5·78
1910	30·43	149	65·60	153	12,093	169	184	4·83
1911	32·93	162	71·26	166	13,358	182	187	4·73
1912	37·92	186	78·48	183	15,629	219	199	4·66
1913†	9·95	..	21·46	..	4,041	..	188	4·73
1913-4	37·77	185	82·61	193	15,623	219	189	4·64
1914-5	35·09	172	80·97	189	15,226	213	188	4·43
1915-6	38·76	190	82·50	192	17,158	241	208	4·34
1916-7	41·43	203	86·24	201	19,826	278	230	4·01
1917-8	44·50	218	85·47	199	20,015	281	246	4·08
1918-9	49·14	241	91·16	212	22,141	310	243	4·26
1919-20	47·12	231	87·63	204	22,402	314	232	4·43
1920-1	47·97	235	87·54	204	19,921	279	228	4·62
1921-2	49·52	243	90·14	210	17,713	248	197	5·37
1922-3	58·02	285	93·85	219	18,374	258	197	6·15
1923-4	60·28	296	98·21	229	18,841	264	192	6·13
1924-5	66·45	326	..‡	.‡	21,269	298	273	6·00
1925-6	64·42	316	..	..	19,900	279	249	6·22
1926-7	65·08	319	..	..	20,376	285	237	6·12
1927-8	69·41	341	..	..	21,902	307	244	6·08
1928-9	71·16	349	..	..	21,889	307	241	6·24
1929-30	68·83	338	..	..	21,525	302	246	6·14
1930-1	64·41	316	..	..	20,406	286	245	6·06
1931-2	58·73	288	..	..	18,347	257	246	6·15
1932-3	56·89	279	..	..	17,203	241	244	6·35
1933-4	61·59	302	..	..	18,707	262	245	6·32
1934-5	64·35	316	..	..	20,352	285	241	6·07
1935-6	64·69	318	..	..	20,554	288	236	6·04
1936-7	69·88	343	..	..	21,435	301	249	6·25

* *Railways in India Administration Report*, Vol. II till 1921-2; *Indian Railways*, Vol. II, 1922-3; *Railway Board's Reports*, Vol. II for subsequent years. The figures of earnings for 1922-37 in this table do not agree with those in Table 36, which exclude refunds.

† First quarter only.

‡ Statistics not available.

this head may be examined. The net ton milage in 1900 amounted to 7,132 millions; increasing in 1910 to 12,093 millions, it was more than doubled in 1912. In the succeeding eight years it described an uninterrupted upward curve without even the setbacks noticeable in earnings. The record figure of 22,402 millions was attained in 1919-20, representing a percentage of 314 as compared with 1900. During the next two years the percentage was reduced to 248, but it recovered again, reaching 307 by 1927-8. The decrease in the percentage since 1929-30 was fairly rapid and in 1932-3 it had dropped to 241. The improvement during the next two years was substantial and in 1936-7 the net ton milage stood at 21,435 millions and the percentage at 301.

Statistics of average haul afford another mode of studying freight traffic, namely, by examining the average distance to which a ton of goods is carried. That distance was 155 miles in 1900. By 1917-8 it had increased to 246, and by 1924-5 to 273 miles. During succeeding years the average haul varied from 236 to 249. The longer haul represented the effect of steadily increasing demand for freight transportation by rail for all classes of goods throughout the country.

The record of goods transportation during the pre-separation period clearly epitomized the effects of the economic development of the country. That the expansion in traffic represented a permanent increase is proved by the statistics of freight traffic during the post-separation period. This fact should be kept in mind in examining the performance of Class I railways. As they constitute the principal railway systems in the country their figures reflect the same trends as those shown by the totals for all Indian railways. We may now proceed to examine the goods earnings, tonnage and ton milage of Class I railways during 1924-37. The statistics and percentage variations are shown in Table 50.

The year 1924-5 was exceptionally good from the point of view of goods traffic. Class I railways obtained an increase of Rs. 6 crores in this year as compared with the goods earnings

TABLE 50. STATISTICS OF FREIGHT TRANSPORTATION OF CLASS I RAILWAYS (1923-37)*

Year	Earnings Rs. in crores	%	Net tons (millions)	%	Net ton miles (millions)	%	Average lead
1923-4	58·80	91	94	92	18,638	88	199
1924-5	64·87	100	102	100	21,064	100	206
1925-6	62·79	97	101	99	19,662	93	194
1926-7	63·41	98	108	106	20,103	95	187
1927-8	67·59	104	113	111	21,620	103	192
1928-9	69·31	107	114	112	21,645	103	189
1929-30	66·88	103	113	111	21,265	101	186
1930-1	62·57	97	105	103	20,146	96	192
1931-2	57·03	88	94	92	18,107	86	192
1932-3	55·30	85	90	88	16,978	81	190
1933-4	59·83	92	98	96	18,460	88	189
1934-5	62·55	97	107	105	20,091	95	187
1935-6	62·93	97	110	108	20,296	96	185
1936-7	68·09	105	111	109	21,172	101	191

* *Railway Board's Reports*, Vol. II, revised figures taken, wherever available.

of 1923-4. The net tonnage and ton milage also stood higher. There was a slight deterioration in the next two years, followed by a recovery in earnings which, by 1928-9, touched Rs. 69 crores, or a percentage level of 107 as compared with 1924-5. In the following year there was a decrease to Rs. 67 crores or to 103. With the commencement of the depression, goods earnings began to drop. In 1932-3 the percentage was only 85, which during the next two years increased to 97. The trend of freight revenues was thus decidedly more encouraging than that of passenger revenues. This is borne out by the percentages of the top and bottom levels of passenger revenues, namely 102 and 77, which indicate a comparatively lower degree of expansion and greater extent of deterioration during 1924-37 than that shown by goods earnings, which improved to 107 and receded to only 85.

Net tonnage of freight generally described the same curve of increase. Class I railways handled, in 1924-5, 102 million tons, an increase of 8 millions over the previous year. After a slight recession to 101 million tons the volume of goods increased to 114 million tons in 1928-9, the year which recorded the largest tonnage for the whole decade. The reduction in tonnage was not so steep in the following years. In 1930-1, Class I railways carried 3 per cent more than they did in 1924-5. In the next two years, the percentage of the net tonnage

decreased to 88. An encouraging revival in succeeding years raised it to 109 by 1936-7, or to approximately the earlier pre-depression levels.

Net tonnage of freight does not provide a satisfactory index of goods transportation as it does not take the distance factor into account. An increase in tonnage may be offset by a decrease in the distance over which goods are carried or vice versa. We have, therefore, to turn to net ton milage which, as a product of both volume and distance, presents a more accurate yardstick for measuring freight traffic performance. The statistics of net ton milage included in Table 50 show that the movement since 1924-5 was in greater accord with the trend of earnings. The net ton milage during 1924-5 was 21,064 millions. After a decrease during 1925-7, it improved to 21,645 millions, the percentage being 103. Next followed a gradual decrease till the lowest percentage level of 81 was touched in 1932-3. Net ton milage recovered rapidly thereafter and by 1936-7 the percentage returned to 101.

The average distance to which a ton of goods was transported in 1924-5 was 206 miles, slightly higher than in the previous year, and, in fact, the highest recorded for the entire period. The lead dropped to 194 miles in 1925-6, and to 186 by 1929-30. During the depression it varied from 192 to 185 miles. For the entire period, therefore, the average haul showed a narrow margin of fluctuation.

COMMODITY STATISTICS

Before proceeding to examine the principal commodities which provided the bulk of the freight traffic and earnings, it should be stated that the task of detailed analysis is not so easy as in the case of passenger traffic. As regards passenger traffic there are only four classes of service and the data pertaining to them are readily obtainable. But in the case of goods traffic, the classification, rating, transportation and economic characteristics make the subject one of almost bewildering complexity. Further, there has not been either

uniformity or consistency in the presentation of annual statistics of commodities transported. Changes in classification and bases of marshalling data make comparisons difficult, except for limited periods. A brief reference has, therefore, to be made to the character of the statistical data to appreciate their limitations.

Prior to 1920-1, the commodity statistics prepared by the Railway Board were based on a system devised in 1880, to which changes were made from time to time, and consisted of 35 groups.[1] There was not, as with the American or Canadian classifications, any broad principle underlying it.[2] Manufactured

[1] The 35 classes were made up as follows :

1. Apparel including drapery, haberdashery, millinery, uniforms, accoutrements, boots and shoes. 2. Coal and coke carried for the public and foreign railways. 3. Cotton : (*i*) Raw ; (*ii*) Manufactured : (*a*) Twist and yarn (European) ; (*b*) Twist and yarn (Indian) ; (*c*) Piecegoods (European) ; (*d*) Piecegoods (Indian) ; (*e*) Others. 4. Chemicals excepting saltpetre. 5. Drugs : (*i*) Intoxicating ; (*ii*) Non-intoxicating : (*a*) Medical preparations ; (*b*) Others. 6. Dyes and tans : (*i*) Alizarine and aniline dyes ; (*ii*) Cutch ; (*iii*) Indigo ; (*iv*) Myrabalans ; (*v*) Tanning barks ; (*vi*) Turmeric ; and (*vii*) Others. 7. Fodder : (*i*) Oil-cake ; (*ii*) Hay, straw and grass, bran. 8. Fruits and vegetables, fresh. 9. Grain and pulse : (*i*) Gram and pulse ; (*ii*) *Jowar* and *bajra* ; (*iii*) Rice in husk ; (*iv*) Rice not in husk ; (*v*) Wheat ; (*vi*) Wheat flour ; (*vii*) Others. 10. Hides and skins : (*i*) Hides of cattle : (*a*) Dressed or tanned ; (*b*) Raw ; (*ii*) Skins of sheep : (*a*) Dressed or tanned ; (*b*) Raw. 11. Horns. 12. Hemp (Indian) and other fibres excluding jute. 13. Jute : (*i*) Raw ; (*ii*) Gunny bags and cloth. 14. Lac. 15. Leather : (*i*) Unwrought ; (*ii*) Wrought, excepting boots and shoes. 16. Liquors : (*i*) Ale and beer ; (*ii*) Wines and spirits of all kinds, including country spirits ; (*iii*) All other sorts including toddy and fermented liquor other than beer. 17. Metals : (*i*) Brass, unwrought ; (*ii*) Brass manufactures ; (*iii*) Copper, unwrought ; (*iv*) Copper manufactures ; (*v*) Iron and steel : (*a*) Unwrought (dust, slag, pig iron and iron too old for remanufacture) ; (*b*) Wrought : (1) Bars, sheets, girders and other commercial forms of iron and steel ; (2) Machinery and millwork ; (3) Other manufactures including hardware and cutlery ; (*vi*) Metallic ores ; (*vii*) Others. 18. Mineral substances : (*i*) Marble and stone ; (*ii*) Chalk and lime ; (*iii*) Others. 19. Oils : (*i*) Kerosene ; (*ii*) Castor ; (*iii*) Cocoanut ; (*iv*) Mustard and rape ; (*v*) Others. 20. Oilseeds : (*i*) Castor ; (*ii*) Earthnuts ; (*iii*) Linseed ; (*iv*) Poppy ; (*v*) Rape and mustard ; (*vi*) *Til* or gingelly ; (*vii*) Others. 21. Opium. 22. Paper and pasteboard. 23. Provisions : (*i*) Dried fruits and nuts ; (*ii*) Ghee ; and (*iii*) Others. 24. Railway plant and rolling stock carried for the public and the foreign railways : (*i*) Locomotives, engines, tenders and parts thereof ; (*ii*) Carriages and trucks and parts thereof ; (*iii*) Materials : (*a*) Steel rails and fishplates ; (*b*) Sleepers and keys of steel and cast iron ; (*c*) Others. 25. Salt. 26. Saltpetre and other substances : (*i*) Saltpetre ; (*ii*) Other saline substances. 27. (*i*) Silk : (*a*) Foreign ; (*b*) Indian ; (*ii*) Piecegoods : (*a*) Foreign ; (*b*) Indian. 28. Spices : (*i*) Betel nuts ; (*ii*) Cardamoms ; (*iii*) Chillies ; (*iv*) Ginger ; (*v*) Pepper ; and (*vi*) Others. 29. Sugar : (*i*) Refined or crystallised, including sugar candy ; (*ii*) Unrefined : (*a*) Sugar ; (*b*) *Gur, rab*, jaggery, molasses and other saccharine produce. 30. Tea : (*i*) Foreign ; (*ii*) Indian. 31. Tobacco : (*i*) Unmanufactured ; (*ii*) Manufactured : (*a*) Cigars ; (*b*) Other sorts. 32. Wood : (*i*) Timber, unwrought ; (*ii*) Manufactured. 33. Wool : (*i*) Raw ; (*ii*) Manufactured : (*a*) Carpets ; (*b*) Piecegoods, European ; (*c*) Piecegoods, Indian ; (*d*) Other sorts of manufactures. 34. All other articles of merchandise, 35. Animals : (*i*) Horses ; (*ii*) Cattle ; (*iii*) Sheep ; (*iv*) Elephants.

[2] The Interstate Commerce Commission, United States, has classified the freight traffic of the American railways into six general classes of commodities : namely, (1) Products of agriculture ; (2) Products of animals ; (3) Products of mines ; (4) Products of forests ; (5) Manufactures ; (6) Merchandise and miscellaneous. The Canadian Classification is also on the same lines.

twist and yarn, for instance, were classified into two divisions : European and Indian. Oils were headed with kerosene and continued with castor, cocoanut, mustard and rape. Foreign and Indian silk piecegoods, amounting to 42 and 69 tons and yielding Rs. 2,500 and Rs. 1,300, respectively, were set out in full detail, while coal and coke, which accounted for 22 million tons and Rs. 6·21 crores, got only one division. The Acworth Committee did not exaggerate matters when they severely criticised the inadequacy and unreliability of the statistics of the period. But whatever their failings, they at least had the merit of comparability till 1920-1. In 1922 an attempt was made to revise the system, and the number of main groups was reduced to 26 in the report for 1921-2. Chalk and limestone took the first place and apparel and haberdashery, drapery, etc., disappeared altogether from the list of heads. The new classification was retained for a year, but in 1922-3 it was further reduced to 25. It was only with effect from 1925-6 that the commodities were classified on a more or less intelligible basis. In the final classification, which is the present one, 42 groups of commodities were brought together under eight heads, namely,

(1) Fuel : coal, coke and patent fuel ; and oil fuel and firewood and other fuel
(2) Heavy merchandise
(3) Light merchandise
(4) Other commodities
(5) Military traffic
(6) Live stock
(7) Railway materials
(8) Materials on revenue account.

The most important of these eight classes are the second and third, 'heavy' and 'light' merchandise. The principle adopted to group commodities as 'heavy' or 'light' merchandise was not, as one would suppose, on the basis of their actual weight, density or bulk, but their loading qualities. All commodities, which ordinarily loaded to the full carrying capacity of a wagon were treated as 'heavy,' and the others 'light'.

At present heavy merchandise consists of the following sixteen commodities:

(1) Rice in the husk
(2) Rice not in the husk
(3) Gram and pulses
(4) Wheat
(5) *Jowar* and *bajra*
(6) Other grains
(7) Marble and stone
(8) Salt
(9) Sugar, refined and unrefined
(10) Wood, unwrought
(11) Metallic ores
(12) Oil seeds
(13) Cotton, raw and pressed
(14) Petrol in bulk
(15) Kerosene in bulk
(16) Molasses in bulk.

Light merchandise contains twelve commodities which are:

(1) Cotton, raw unpressed
(2) ,, manufactures
(3) Fodder
(4) Fruits and vegetables fresh
(5) *Gur*, jaggery, etc.
(6) Jute, raw
(7) Iron and steel, wrought
(8) Kerosene oil in tins
(9) Petrol in tins
(10) Tobacco
(11) Provisions
(12) Manures of all kinds.

There has been some disturbance in some of the groups, created by the interchange of the commodities by further sub-division between these two groups. Thus, '*Gur*, jaggery and molasses,' which was light merchandise before 1929-30, became heavy merchandise thereafter when transported 'in bulk'. When it was not, it continued to be light merchandise. Similarly, kerosene and petrol 'in bulk' have been placed in heavy merchandise, leaving the tinned consignments in the category of light merchandise.

As we have selected 1924-5 as the basis for comparison for the post-separation period, it is necessary to examine the typicality of the statistics of the year. The comparability of the commodity figures of the year is impaired by the fact that the statistics of military traffic, shown separately with effect from 1925-6, were included under the other commodities. The error is not likely to be serious as all military traffic hardly amounts to one-half per cent of the total and is, therefore, ignored in the analyses which follow. The only other course is to take the year 1925-6 for the purpose of comparison, instead of 1924-5 which has been taken as the base in connexion with

other topics. On this ground the year 1924-5 has been retained in spite of the possible exaggeration which the inclusion of military traffic for the year may produce in the movement of certain commodities. This will be corrected by an examination of military traffic itself towards the end of the chapter.[3]

The principal commodities carried by the Indian railways may be broadly grouped under three heads: (1) Products of agriculture; (2) Products of mines and forests; (3) Manufactures and miscellaneous.

PRODUCTS OF AGRICULTURE

In a predominantly agricultural country like India, the products of agriculture naturally provide the largest volume of traffic. The principal agricultural commodities and their relative importance from the point of view of the freight traffic on Class I railways may be seen from the following table.

TABLE 51. IMPORTANT AGRICULTURAL COMMODITIES CARRIED BY CLASS I RAILWAYS*
(1929-30)

	Commodities	Tons (in millions)	% of 'total' traffic	Rs. in crores	% of 'total' earnings
(1)	Rice	4·54	6·5	4·17	6·6
(2)	Gram and pulses	1·61	2·3	2·15	3·4
(3)	Wheat	1·63	2·3	2·03	3·2
(4)	*Jowar* and *bajra*	0·42	0·6	0·56	0·9
(5)	Other grains	0·72	1·0	0·83	1·3
(6)	Oil seeds	2·79	4·0	3·95	6·3
(7)	Raw cotton	1·22	1·7	4·50	7·1
(8)	Raw jute	1·04	1·5	1·46	2·3
(9)	Fruits and vegetables	1·28	1·8	1·08	1·7
(10)	Fodder	0·95	1·4	0·61	1·0
	TOTAL	16·20	23·1	21·34	33·8

* Figures of tonnage and earnings taken from *Railway Board's Report*, 1929-30, Vol. II.

[3] It should be added that the grand total for freight traffic in 1924-5 excludes the figures for 'Livestock' and 'Fuel and other revenue stores'. This omission does not occur in the statistics for succeeding years. Therefore, to make the figures comparable, the totals for 1925-6 to 1936-7 taken for purposes of our examination of the commodities also exclude these two items. This leads to a slight exaggeration of the percentages to the totals, which cannot be helped. A corrective may be obtained in the treatment of the traffic under the excluded terms taken up later in the chapter. When the 'total' tonnage and earnings are used in the succeeding pages, they should be understood in this qualified sense only.

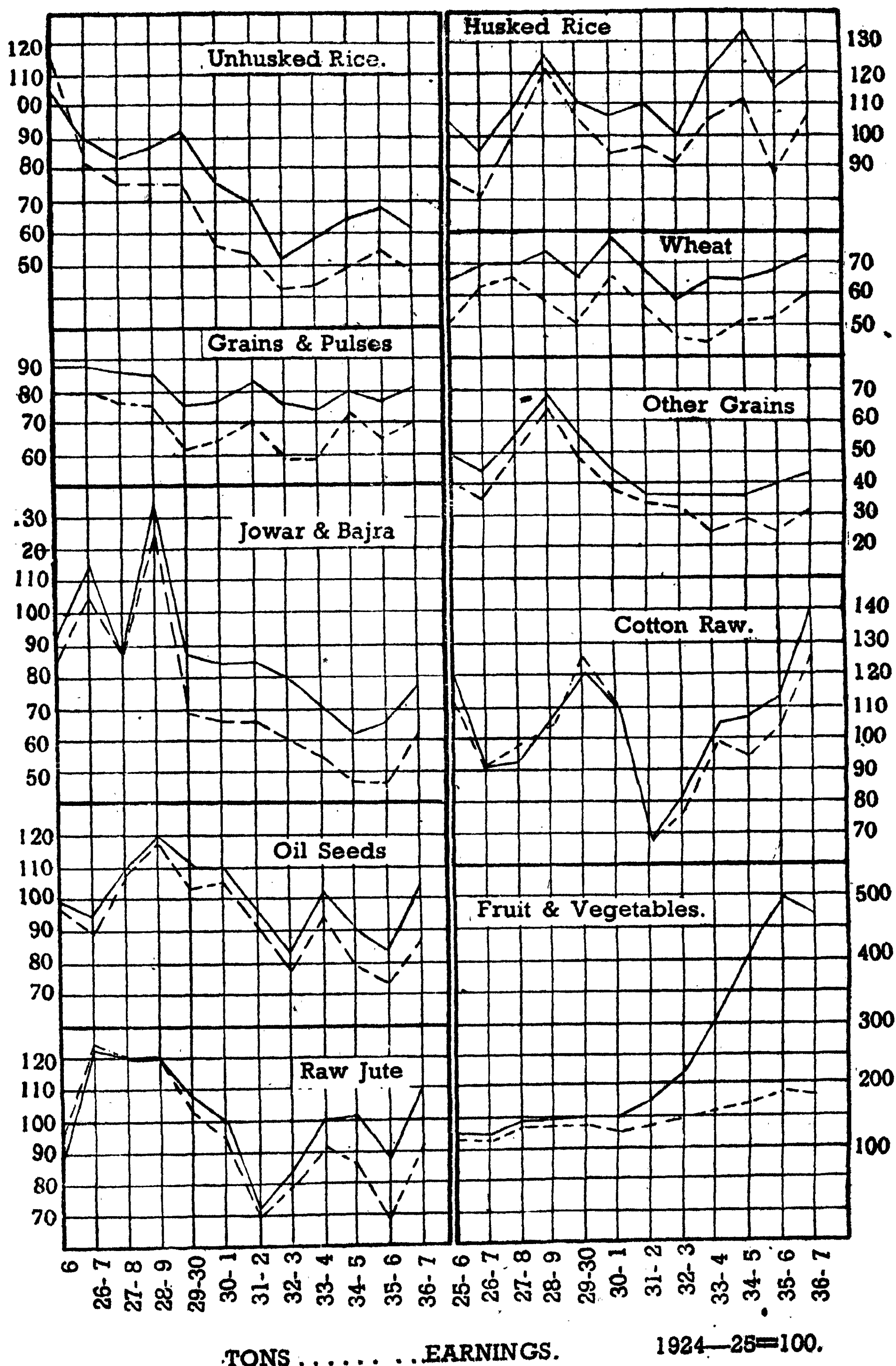
In 1929-30 of the total originating tonnage on Class I railways, 23 per cent was made up of the products of agriculture. The receipts from this traffic were more than one-third of the goods traffic earnings for the year. Of the ten commodities included, rice, from the point of view of tonnage carried, accounted for the largest volume of traffic, namely 4·54 million tons, or 6·5 per cent of the total. Other products of agriculture were less in bulk, but earned relatively, as with raw cotton, larger revenue.

The general trends of traffic and earnings from the principal agricultural commodities may be seen from the charts in Fig. I. Taking the period as a whole the volume of traffic and earnings under unhusked rice, grams and pulses, wheat and 'other grains' were, generally speaking, well below the basic levels. For these commodities, the year 1924-5 appears to have been exceptionally good. Never since that year—before or after the depression—did traffic or earnings come anywhere near the same levels. The normal traffic from these commodities might, therefore, be taken to be in the neighbourhood of the average of 1926-7. Of these four commodities, only unhusked rice suffered from progressive deterioration.

The remaining six commodities, husked rice, *jowar* and *bajra*, oilseeds, raw cotton, raw jute, and fruits and vegetables, disclosed a different picture. Of these, fruits and vegetables provided an instance of a remarkable increase throughout the period. Between 1924-5 and 1932-3, the tonnage doubled and, during the next four years, quintupled. Earnings did not respond in the same proportion, but stood 80 per cent higher at the end of the period.

The remaining five commodities reacted to the influence of prosperity before the depression and of recession thereafter. Thus traffic and receipts from husked rice, *jowar* and *bajra*, and oil seeds attained their peak levels in 1928-9, while from raw cotton they reached their maximum in 1929-30. Raw jute recorded a decrease on its own levels of 1926-7. The commencement of the depression witnessed a sudden decrease

FIGURE I. AGRICULTURAL COMMODITIES : TONNAGE AND EARNINGS, 1924-37



TONS .... EARNINGS. 1924—25=100.

in both traffic and receipts from all these commodities. An upward movement was noticeable from 1932-3 onwards. By 1936-7, traffic in husked rice, oil seeds, raw cotton and raw jute exceeded the basic levels. The tonnage in husked rice reached a new record level, while raw cotton rose above the peak figures of 1929-30, both in respect of tonnage and receipts. *Jowar* and *bajra* alone failed to show any signs of recovery.

Earnings from all agricultural commodities, it may be noticed, declined to a lower level from 1926-7 onwards, due partly to the effects of reductions in freight rates. The percentages for earnings tended to approximate those for tonnage only in the case of oil seeds, raw cotton and raw jute. From the point of view of railway receipts, the traffic in husked rice and raw cotton was more encouraging in 1936-7, when earnings from these two commodities were well above the basic levels. But as regards oil seeds and raw jute, the increase in the tonnage did not produce a corresponding increase in the revenues for 1936-7.

PRODUCTS OF MINES AND FORESTS

We may now turn to the products of mines and forests. The principal commodities for which statistics are available and their tonnage and earnings are given below. The mineral and forest products carried in 1929-30, as might be expected from their character, exceeded the total tonnage of agricultural commodities. The originating traffic amounted to about 30 million tons, or 42 per cent of the 'total' traffic carried in 1929-30.

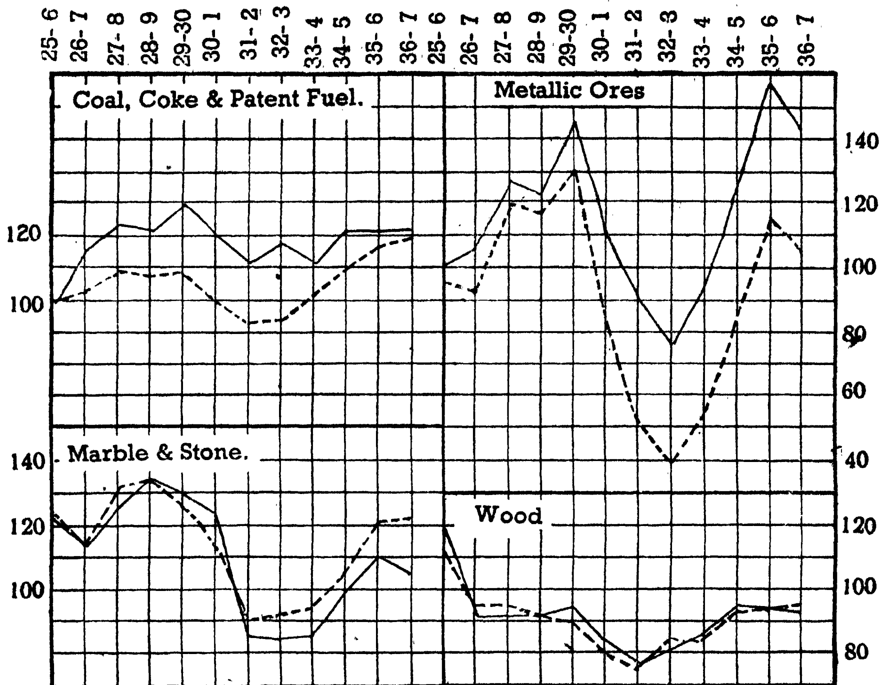
TABLE 52. PRINCIPAL MINERAL AND FOREST PRODUCTS CARRIED BY CLASS I RAILWAYS*
(1929-30)

Commodities	Tons (in millions)	% of 'total'	Rs. (in crores)	% of 'total'
(1) Fuel	21·34	30·6	10·02	15·9
(2) Metallic ores	3·42	4·9	1·47	2·3
(3) Marble and stone	3·45	4·9	0·98	1·6
(4) Wood, unwrought	1·35	1·9	0·85	1·4
TOTAL	29·56	42·3	13·32	21·2

* Figures of tonnage and earnings taken from *Railway Board's Report*, 1929-30, Vol. II.

Together they produced Rs. 13·32 crores in earnings, or 21 per cent of the 'total' receipts for the year. Fuel[4] accounted for approximately two-thirds of the tonnage and three-quarters of the earnings for the whole group. From the point of view of both tonnage and earnings, fuel constitutes the most important commodity carried by Indian railways.

FIGURE II. PRODUCTS OF MINES AND FORESTS: TRAFFIC AND EARNINGS, 1924-37



-TONS . . . . EARNINGS. 1924—25 = 100.

The trends of traffic in the four commodities during 1924-37 may be seen from Fig. II. The progress of the tonnage and earnings from coal, coke and patent fuel during 1926-30 represents a substantial increase. The percentages of the tonnage increased to 130 in 1929-30 and, despite the depression, the

[4] Under the term 'Fuel' are included coal, coke and patent fuel, oil fuel, firewood and other fuel. The discrimination between oil fuel and firewood dates from 1927-8. Prior to that year, the former was included under kerosine oil and the latter under coal, coke and patent fuel. To make the figures comparable, other fuels are excluded in the account in the text. The relative importance of other fuels may be seen from the statistics given in the appendices.

percentage never dropped below 112. In 1934-5 the figure advanced to 122, which was approximately the same as in 1928-9.

The trend of earnings was not as regular as that of traffic, as the changes in freight rates operated on receipts. The increase in receipts during 1929-30 amounted to only 9 per cent as compared with 30 per cent in tonnage. While traffic continued to remain above the basic level in 1931-2, earnings dropped to 94 per cent, and increased to only 101 and 110 in the succeeding two years.

Indian railways are the largest single group of consumers of coal. The regional concentration of supplies has given rise to a large volume of traffic to meet the needs of railways situated at considerable distances from the collieries. The volume of traffic thus created has to be distinguished from the traffic arising from public demand. Coal, coke and patent fuel carried for the consumption of home and foreign railways amount approximately to a fifth of the total tonnage under this head. In 1929-30 for instance, this traffic was 4·26 million tons, or 22 per cent, the balance of 15·42 million tons, or 78 per cent, being on public account. The earnings attributable to both these groups were distributed approximately in the same proportion, namely, Rs. 2·77 crores or 29 per cent from coal on railway account, and Rs. 6·75 crores or 71 per cent from public traffic.[5]

Fuel traffic was thus on a higher level as compared with 1924-5. Public traffic increased remarkably by 1934-5, and the earnings, while showing a lower rate of increase, improved sufficiently to make up for the decline in the receipts from the traffic on railway account.

Metallic ores[6] were more susceptible to the influence of business conditions. Thus both tonnage and earnings reached their peak levels in 1929-30 and came down together to a very low figure in 1932-3. From 2·32 million tons in 1924-5, the

[5] The differentiation between railway and public traffic in coal was introduced from 1927-8.

[6] Metallic ores include a wide range of mineral products, namely, barytes, bauxites, chromite, hematite, red oxide of iron, iron ore, lead ore, manganese ore and other metallic ores.

traffic increased to 3·42 million tons in 1929-30, the percentage being 147. In the next three years the tonnage was halved, and the percentage dropped to 76. Earnings from metallic ores increased from Rs. 1·12 crores in 1924-5 to Rs. 1·47 crores in 1929-30, the percentage being 131. The decrease in income in 1932-3 was even greater than that in tonnage: the percentage dropped to 40. Again reacting strongly to the stimulus of business conditions, tonnage established a new record in 1935-6, namely, 158 per cent, though this improvement was not imparted to earnings to the same extent.

Marble and stone showed similar trends, but the extent of the decrease was less, and the recovery was quite encouraging. The traffic from unwrought wood offered a contrast to the other three commodities. It never recovered during the period from the decrease in both tonnage and receipts suffered in 1926-7.

The earnings from these four commodities also tended, as with the agricultural commodities, to be lower from 1925-6 onwards. The difference was less in unwrought wood, but in marble and stone after 1931-2, earnings were relatively higher.

MANUFACTURES AND MISCELLANEOUS

Manufactured and semi-manufactured commodities constitute, in a sense, the most important of the commodity groups. As may be seen from the comparative tonnage and earnings, in Table 53, manufactured products provide the highly-rated

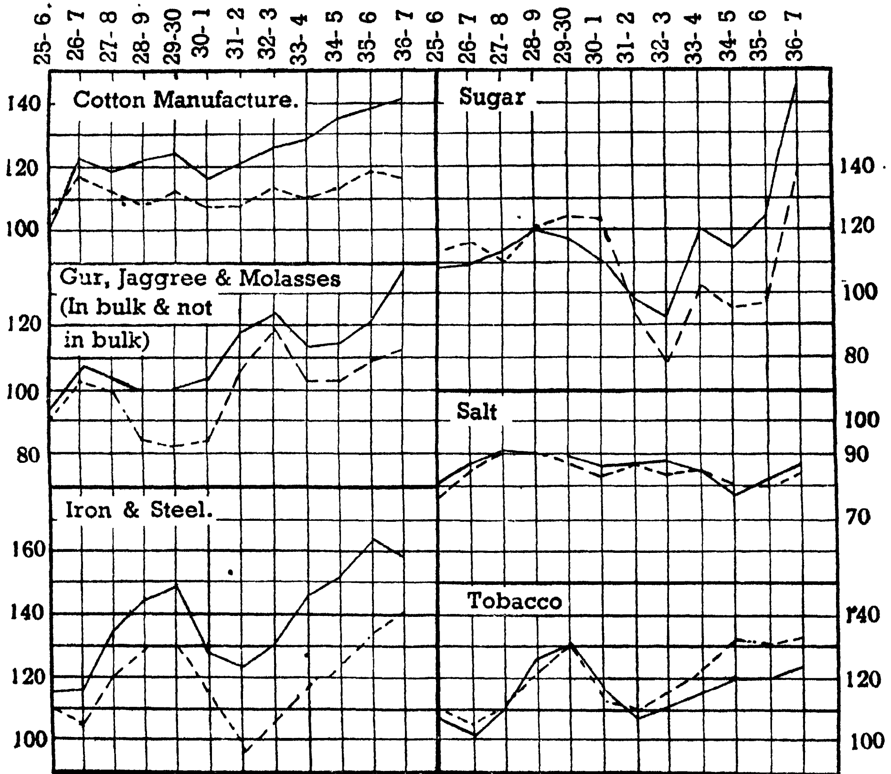
TABLE 53. PRINCIPAL MANUFACTURED AND MISCELLANEOUS PRODUCTS CARRIED BY CLASS I RAILWAYS*
(1929-30)

	Commodities	Tons (in millions)	% of 'total'	Rs. (in crores)	% of 'total'
(1)	Cotton manufactured	0·61	0·9	2·41	3·8
(2)	Sugar, refined and unrefined	0·82	1·2	2·03	3·2
(3)	*Gur*, jaggery and molasses	0·72	1·0	0·96	1·5
(4)	Salt	1·47	2·1	1·96	3·1
(5)	Iron and steel manufactures	1·31	1·9	2·46	3·9
(6)	Tobacco	0·33	0·5	0·81	1·3
	TOTAL	5·26	7·6	10·63	16·8

* Figures of tonnage and earnings taken from the *Railway Board's Report*, 1929-30, Vol. II.

traffic and in proportion to the tonnage they are more remunerative to the railways than the commodities included in the two preceding groups. Thus with but 8 per cent of the total tonnage, the earnings from these commodities amounted in 1929-30 to 17 per cent of the total income.

FIGURE III. MANUFACTURES AND MISCELLANEOUS : TONNAGE AND EARNINGS, 1924-37



———TONS . . . . EARNINGS. 1924—25 = 100.

The trends of traffic are shown in Fig. III. The general impression is on the whole encouraging. The expansion in tonnage and earnings from cotton manufactures was sustained throughout. Cotton manufactures accounted for less than two-thirds of a million tons, and earned well over Rs. 2 crores a year. The percentage of tonnage increased to 124 in 1929-30, and after a slight decrease in the following year, advanced steadily to 141 in 1936-7. Earnings from cotton manufactures

did not increase at the same rate as the tonnage, but the improvement was substantial. Even during the depression the percentage of traffic receipts from manufactured cotton never dropped below 108, and during 1932-6 it increased from 113 to 118. On the whole cotton manufactures proved to be a dependable commodity with prospects of increase in the future.

Iron and steel manufactures[7] increased to an even higher level and the tonnage handled was relatively larger. The traffic under this head amounted to 880,000 tons in 1924-5 and earnings in that year were Rs. 1·87 crores. In 1929-30 the percentage of tonnage was 149 and of receipts 131. In spite of a decrease during the first three years of the depression, the lowest point touched in respect of tonnage was still 25 per cent higher than the basic level. By 1933-4 the traffic attained the peak levels of 1929-30, and in the next three years still higher levels were reached. In 1935-6 the percentage for tonnage was 163.

The traffic receipts from iron and steel manufactures suffered greater deterioration during the depression. From 131 in 1929-30, the percentage of earnings dropped to 97 in 1931-2. From that year onwards there was a steady improvement as a result of which earnings passed the pre-depression maximum in 1935-7, and stood at 142. Iron and steel manufactures had thus definitely gained in importance.

Sugar traffic increased both in tonnage and receipts till 1930, after which there was a deterioration till 1933. The total volume of sugar, refined and unrefined, carried in 1924-5 amounted to 700,000 tons. The percentage for tonnage increased to 120 in 1928-9, and after a decrease to 91 during 1930-3, again advanced to 167 in 1936-7, which was the highest level touched during the whole period.

Earnings from sugar, which stood at Rs. 1·64 crores, disclosed an increase during the first six years which was larger than that in tonnage. After reaching 124 in 1929-31, the

[7] Under this head are included all fabricated articles irrespective of value, such as rails, tools, machinery, nails, pots, pens, pins, typewriters, etc.

percentage for earnings dropped to 78 in 1932-3, from which there was a rapid improvement. But in 1936-7 earnings, responding to the striking increase in traffic, stood 40 per cent higher than the basic level, the maximum recorded during 1924-37.

Tobacco stood throughout on a higher level. There were, of course, ups and downs, such as the rise in tonnage to 132 per cent in 1929-30 and the decrease to 108 in 1931-2. But after this the tonnage again increased to 120 per cent. Earnings from tobacco were about Rs. 0·67 crore, but latterly they advanced to Rs. 0·8 crore. The peak level of 1929-30 was reached, in fact exceeded, in 1934-5, and the position of traffic receipts during the six depression years, 1930-6, was more satisfactory than in the preceding six years.

Gur, jaggery and molasses were stagnant as regards tonnage and earnings till 1931. From that year onwards, on account of the rapid development of the sugar industry, there was a general increase of 15 per cent and over. The earnings for each year, which were about a crore before 1930-1, stood higher by Rs. 20 lakhs and over. The percentages for earnings were lower than those for tonnage during 1930-7.

Compared with 1924-5, the traffic in salt fluctuated between 80 and 90 per cent of the basic level during the whole period 1925-37, excepting 1934-5 in which the tonnage dropped to 77. Earnings from the carriage of salt were fairly stable and generally in the neighbourhood of 85 per cent.

With the solitary exception of salt, which kept below the record of 1924-5, Indian railways fared well in both traffic and earnings arising from all the other commodities in the group, even during the depression.

LIVE STOCK, MILITARY TRAFFIC, RAILWAY MATERIALS, AND MATERIALS AND STORES ON REVENUE ACCOUNT

The four classes of traffic not included among the commodities considered in the preceding paragraphs are live stock, military traffic, railway materials, and materials and stores

on revenue account. The volume of traffic and earnings under these heads may be seen from the figures for 1929-30 given below.

TABLE 54. TRAFFIC AND EARNINGS FROM LIVE STOCK, MILITARY TRAFFIC, RAILWAY MATERIALS, AND MATERIALS AND STORES ON REVENUE ACCOUNT*

(1929-30)

	Tons (in millions)	% of total	Rs. (in lakhs)	% of total
(1) Live stock	0·20	0·2	63	0·9
(2) Military traffic	0·34	0·4	38	0·6
(3) Railway materials	6·38	7·4	94	1·4
(4) Materials and stores on revenue account	15·94	18·5	312	4·7
TOTAL	22·86	26·5	507	7·6

* Figures of tonnage and earnings taken from *Railway Board's Report* 1929-30, Vol. II.

Live stock and military traffic provided only a comparatively small volume of traffic. Taken together, they accounted for slightly more than half a million tons and about a crore in receipts. Expressed as a percentage of the totals, the tonnage amounted to 0·6 per cent, and receipts to 1·5 per cent. Railway materials were much larger and produced 6·38 million tons and Rs. 94 lakhs. But the most important of the group is the last item, materials and stores on revenue account, which amounted to 16 million tons and earned Rs. 312 lakhs.

The volume of traffic in railway materials increased from 3·64 million tons in 1925-6 to 9·91 million tons in 1927-8, or to 272 per cent, the highest figure reached during the period. There was a gradual decrease thereafter, and after a further reduction during the depression the percentage stood at 117 in 1936-7.

The trend of earnings was similar. From Rs. 70 lakhs, receipts increased to Rs. 1·52 crores in 1927-8. The percentage of receipts, which during this year was 216, gradually came down to 74 in 1936-7.

In point of magnitude of tonnage carried, the materials and stores on revenue account came second only to fuel traffic. The tonnage for 1925-6, the highest figure recorded during

the period, exceeded 16 millions. The trend during the period was one of decrease. The percentage for tonnage decreased to 97 in 1929-30 and 65 in 1932-3 increasing thereafter by 1936-7 to 75.

Earnings from revenue stores amounted to Rs. 2·91 crores in 1925-6. The percentage, as compared with this year, rose to 116 in 1927-8, but in 1930-1 came down to 99. After a further decrease, there was an improvement to 92 in 1936-7.

Revenue stores provided 21 per cent of the total tonnage in 1925-6. From this level there was a decline to 15 per cent, in 1936-7. As compared with the volume of tonnage, earnings represented a smaller proportion, namely 4 to 5 per cent of total receipts.

Live stock traffic was on the decrease since 1925-6. The tonnage as compared with this year, declined to two-thirds and receipts to three-fourths in 1936-7. The traffic and earnings from military traffic also showed a decline during the depression.

Of the four groups of commodities considered in the foregoing paragraphs, namely, products of agriculture, products of mines and forests, manufactures and miscellaneous, and live stock, military traffic, railway materials and revenue stores, the first three constitute the main classes on which goods traffic depends. The statistical data as at present available make it impossible to obtain a clear division between the products of agriculture, the products of mines and forests, and manufactured goods. Thus, flour, a processed commodity, has come under wheat, while rock salt, a mineral product, is merged in manufactured salt and is taken under manufactures. But taking the groups broadly as indicative of the division between agricultural, mineral, forest and manufactured products, there appears to have occurred certain changes as regards their relative importance. A comparison of the tonnage, earnings and percentage proportions for each group given below shows that agricultural products provided in 1936-7 a smaller proportion of tonnage and still lower pro-

portion of earnings than in 1924-5. Mineral and forest products remained almost the same and an increase occurred under manufactures.

TABLE 55. TRAFFIC AND EARNINGS BY COMMODITY GROUPS

	Originating tonnage						Earnings					
	1924-5		1929-30		1936-7		1924-5		1929-30		1936-7	
	Tons	%	Tons	%	Tons	%	Rs.	%	Rs.	%	Rs.	%
Products of agriculture	17·23	30	16·20	23	19·29	28	24·84	41	21·34	34	21·41	33
Mines and forests	22·79	40	29·56	42	27·55	39	12·00	20	13·02	21	13·03	20
Manufactures	4·70	8	5·26	8	6·00	9	9·62	16	10·30	17	11·46	18

Tons in millions. and Rs. in crores. Percentages as proportion to 'Total.'

These three groups account for 70 to 80 per cent of the total traffic and earnings. The bulk of the remaining tonnage was provided by railway materials and revenue stores.

The fact that in spite of the depression substantially higher levels of traffic were reached after 1930—indeed in a good many instances even higher than the pre-depression peak figures—is significant. Much of the increase, under coal, husked rice, metallic ores, cotton manufactures, iron and steel wrought, and tobacco, appears to be of a permanent character, which, as will be seen later, resulted from the tendency towards industrialization. The increases under these heads were obscured by the volume of the low grade and low rated commodities. Thus, fuel, railway materials and revenue stores amounted to more than one-half of the total originating tonnage and produced about a fifth of the freight earnings in 1929-30. During succeeding years there was a decrease in the proportion of the tonnage to 46 per cent by 1936-7. Four-fifths of the goods earnings were produced by the remaining one-half of the tonnage.[8]

To conclude. Freight traffic during 1924-37 was thus remarkably stable. Indian railways were put to a severe

[8] Compare the following figures :—

	1936-7		1929-30	
	Tons (millions)	Crores	Tons (millions)	Crores
Fuel (excluding oil)	21·11	Rs. 10·07	21·34	Rs. 10·02
Railway materials	4·26	,, 0·52	6·38	,, 0·94
Revenue stores	12·40	,, 2·67	15·94	,, 3·12
TOTAL ..	37·77	Rs. 13·26	43·66	Rs. 14·08
Proportion to total ..	46%	20%	51%	21%

test during the depression, when foreign trade declined by more than 50 per cent in value. This must have affected rail traffic; but the fact that the decrease in goods traffic was substantially less than the recession in exports and imports,[9] affords conclusive evidence of the greater importance of internal traffic. As Indian railways obtained a greater portion of their business from domestic rather than foreign trade they were to that extent free from disturbances directly arising from changes in world conditions. This conclusion has a bearing on the underlying bias of the rating system, which in the past was alleged to favour foreign at the expense of domestic industry and trade. This raises certain problems which will be discussed later.

NET TON MILES AND AVERAGE LEADS

The volume of traffic considered in the last section dealt only with the total originating tonnage under the principal commodities. But as the statistics of tonnage offer no indication as to the volume of transportation involved, we may now turn to the net ton milage statistics. Net ton milage statistics are unfortunately not available for each commodity, but with effect from 1929-30 the total figures are set out under three heads, coal, grain and oil seeds, and other commodities. The ton milage for coal is presented under three sub-heads, 'public traffic,' 'foreign line and home line construction' and 'home line.' The second group has a homogeneity and is of special importance in an agricultural country like India. The third, consisting of manufactures, is heavily weighted by the inclusion of revenue stores. It is not clear what purpose is served by the net ton milage of this group.

The net ton miles for the three groups of commodities during 1929-37 may be seen in Table 56. The ton miles under coal decreased during the period. Grain and oilseeds, after a decrease during 1932-3, recovered by 1936-7 to such an extent as to exceed the record for 1929-30. 'Other' commodities,

[9] The total value of imports and exports declined from Rs. 653·61 crores in 1924-5 to less than Rs. 300 crores during 1931-2 to 1935-6.

TABLE 56. NET TON MILES AND AVERAGE LEADS ON CLASS I RAILWAYS (1924-37)*

Year	Net ton miles (in thousand millions) Public coal	Foreign railways coal	Home line coal	Grains & oil seeds	Other commodities	Average leads Public coal	Foreign railways coal	Home line coal	Grains & oil seeds	Other commodities
1929-30	4·50	2·38	1·88	3·07	9·43	210	424	252	190	152
1930-1	4·17	2·36	1·81	3·27	8·53	211	445	241	206	151
1931-2	4·02	1·86	1·43	3·12	7·68	214	439	229	207	154
1932-3	3·69	1·72	1·48	2·71	7·37	210	400	246	205	152
1933-4	4·00	1·78	1·59	2·92	8·17	210	378	255	195	155
1934-5	4·29	1·95	1·73	3·16	8·96	207	384	252	201	152
1935-6	4·26	1·98	1·65	2·83	9·58	202	394	244	193	154
1936-7	4·19	2·09	1·73	3·27	9·29	201	404	241	203	161

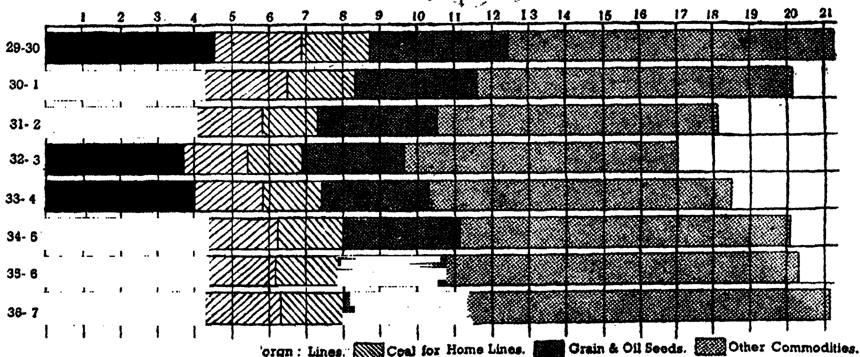
* *Railway Board's Report*, Vol. II, for each year.

after a considerable decrease in 1932-3, also improved to levels higher than 1929-30.

The average leads for coal traffic were different for the three sub-groups. Coal for the public during the eight years 1929-37 had an average lead of 201 to 214 miles. Coal for the home line had longer leads which varied from 229 to 254 miles. Coal for foreign lines and home line construction had the longest leads of all. The average distance in this case varied from 378 to 445 miles.

Grain and oil seeds had average leads which ranged from 190 to 207 miles during 1929-37. 'Other' commodities averaged lower, the distances being 151 to 161 miles.

FIGURE IV. NET TON MILAGE BY COMMODITY GROUPS (000,000,000)



AVERAGE RECEIPTS PER TON MILE

There is one more topic to be considered here in connexion with goods traffic, namely, the average receipts per ton per

mile. The average receipts or rates are obtained by dividing the total freight earnings by the net ton miles. The rate does not discriminate between different classes of traffic, high-rated or low-rated commodities. A ton of cotton goods bears a much higher rate than a ton of coal or mineral ore, and the average rate does not take these differences into account. Fluctuations in the statistics of average rates per ton mile, it should be borne in mind, reflect the average effect of changes in rates, volume, character of traffic and length of haul. Conclusions on the average receipts per ton mile must, therefore, be qualified in the light of changes in these factors.

Before proceeding to summarize the trend of the average rate per ton mile during 1924-37, the character of the long range trends may be referred to. Attention is invited to the statistics of average rates per ton per mile for all Indian railways in Table 49. In 1900 the average rate per ton of goods per mile was 5·88 pies. During the next seventeen years, there was a steady decrease to 4·01 pies, the lowest figure touched. From that level, there was a gradual rise, and the rate increased to 5·37 pies in 1921-2 and 6·13 pies in 1923-4. In 1924-5 there occurred a decrease to 6·00 pies. During the next five years the rate fluctuated between 6·12 pies and 6·25 pies. There was no change during the depression and, except for a slight increase in the average receipts in 1932-3 to 6·35 pies per ton per mile, the margin of variation was almost the same. The figures for all Indian railways, therefore, indicate that after an increase in 1922-3, the average receipts remained at approximately the same level throughout.

The average rates on Class I railways during 1924-37 are shown in Table 57. In 1924-5 the average rate per ton per mile was 5·91 pies. During the next eleven years there was only a slight increase. During the six years ended 1929-30, the increase from 1925-6 onwards amounted to only 2 to 4 per cent. During 1932-3, there was an increase of as much as 6 per cent or 6·25 pies. But the receipts per ton per mile came down to 5·98 pies and rose in 1936-7 to 6·17 pies.

TABLE 57. AVERAGE RATES PER TON PER MILE, CLASS I RAILWAYS (1924-37)*

Year	Broad Gauge		Metre Gauge		Class I Railways	
	Pies	%	Pies	%	Pies	%
1924-5	5·47	100	7·99	100	5·91	100
1925-6	5·63	103	8·32	104	6·13	104
1926-7	5·51	101	8·50	116	6·05	102.5
1927-8	5·49	100	8·28	105	6·00	102
1928-9	5·62	103	8·49	106	6·15	104
1929-30	5·59	102	8·44	106	6·11	103
1930-1	5·42	99	8·27	104	5·96	101
1931-2	5·55	101	8·34	104	6·05	102.5
1932-3	5·73	105	8·52	107	6·25	106
1933-4	5·70	104	8·45	106	6·22	105
1934-5	5·49	100	8·08	101	5·98	101
1935-6	5·49	100	8·04	101	5·95	101
1936-7	5·71	104	8·17	102	6·17	104

* *Railway Board's Report*, Vol. II, for each year.

These average figures do not disclose the fact that the broad gauge railways on the whole had lower rates than the total averages referred to above. On the broad gauge the average rate per ton per mile stood at 5·47 pies in 1924-5. The average rates rarely exceeded the limits of 5·50 and 5·60 pies. Only in 1925-6, 1928-9 and 1932-4 did it pass the higher limit.

On the metre gauge railways the rates were higher. The average receipts, which amounted to 7·99 pies per ton per mile in 1924-5, fluctuated during the next five years between 8·28 pies and 8·50 pies. The range of oscillation during the depression was wider, between 8·04 pies and 8·52 pies. The rates for the metre gauge railways stood 50 per cent higher than those of the broad gauge.

As the average rates per ton per mile do not discriminate between the high-rated and low-rated commodities, some idea as to the spread of the rates may be had from the statistics available under the three groups referred to earlier, namely, coal, grains and oilseeds, and others, shown in Table 58.

The average rate for coal was the lowest. The receipts from public coal were higher and the rate per ton per mile fluctuated between 2·87 and 3·21 pies, the tendency being towards an increase after 1929-30. Coal for home line varied from 2·19 pies to 2·36 pies and that for foreign line and home line

TABLE 58. AVERAGE RATES PER TON PER MILE BY GROUPS OF COMMODITIES *

(*Figures in pies*)

Year	Public coal	Foreign line coal	Home line coal	Grain & oil seeds	Other commodities
1929-30	2·88	2·23	2·19	8·52	8·40
1930-1	2·87	2·14	2·19	8·10	8·51
1931-2	2·88	2·21	2·27	7·99	8·55
1932-3	3·11	2·49	2·36	7·97	8·86
1933-4	3·16	2·46	2·31	8·09	8·64
1934-5	3·19	2·45	2·31	7·69	8·19
1935-6	3·15	2·37	2·31	7·98	7·97
1936-7	3·21	2·37	2·27	7·85	8·35

* *Railway Board's Report*, Vol. II, for each year.

construction from 2·14 to 2·49 pies. The receipts on the latter showed an upward movement during the last five years.

The receipts for grain and oilseeds amounted to 8·52 pies per ton per mile in 1929-30, which was the highest level during the eight years 1929-37. There was a decline during the succeeding years, and the rate was only 7·85 pies in 1936-7. The 'Other' commodities on the whole recorded a higher level of average receipts per ton per mile than the previous groups, and the rate varied from 7·97 to 8·86 pies.

Owing to the composite character of these averages, it is not easy to draw any further conclusions from these statistics, which can only indicate the general trends.

FREIGHT RATES AND THE PRICE LEVEL

The general level of freight rates must in the long run be adjusted to the ability of trade and industry to bear such rates. Transport costs are part of the costs of production, and changes in prices upset the normal ratio which rates bear to commodity prices. In the nature of things prices, subject to competition, change more rapidly, and the adjustment of rates, subject to regulation, follows after a time lag. A general increase of rates, such as that in 1922, can take place only when a substantial advance in prices has established itself. The equilibrium between rates and prices is similarly disturbed when there is a gradual decline in prices. While it would be

impossible to conceive of changes in freight rates with every change in the prices of commodities, over a series of years there should be a correspondence between the general rate and price levels.[10] We may now proceed to examine how the rate level on the Class I railways in India compared with the general price level during 1924-37.

The index numbers of the average rates per ton per mile and of the wholesale prices from 1914 to 1937, given in Table 59, indicate that, relatively to the price level, freight rates

TABLE 59. INDEX NUMBERS OF WHOLESALE PRICES AND AVERAGE RATES PER TON-MILE

(1914=100)

Year	Wholesale prices *	Average rate	Year	Wholesale prices	Average rate
1915	112	98	1928	145	141
1920	201	104	1929	141	139
1921	178	121	1930	116	137
1922	176	139	1931	96	139
1923	172	138	1932	91	143
1924	173	135	1933	87	143
1925	159	140	1934	89	137
1926	148	138	1935	91	136
1927	148	137	1936	92	141

* Calcutta wholesale prices.

were lower till almost 1920. The difference was greatest when prices stood at 201 and freight rates at 104 in 1920. The increases during 1921 and 1922, and the decrease in general prices, narrowed the difference. In 1924 the average rate was about 40 per cent below the price level. By 1930 prices had dropped to 116, while the average rate remained at 137. In the next three years, there was a further decline in prices, and the index number was only 87 in 1933. Freight rates were comparatively at a much higher level, namely at 143. In 1936-7, the average rate dropped to 141, while prices improved to 92. The impression left by these figures is that

[10] 'If it were recognised as a rate-making principle that whenever the price of a commodity was increased or decreased, there would have to be a corresponding increase or decrease of the freight rate for that commodity, there would be no opportunity for any fixity or constancy of freight rates. The entire tariff would be subject to incessant series of changes, the indefiniteness and instability of which would make business impossible.' W. T. Jackman, *Economic Principles of Transportation*, 1935, p. 186.

the incidence of freight rates must have been particularly heavy during the depression period, as the average rate remained at almost the same level as during previous years.

Taking 1924-5 as the basis for comparison, the Class I railways showed essentially the same trends, but in a more accentuated form. Whereas the average rate never dropped below 101, prices declined during the depression to 50 per cent. In 1933-4, the year when prices reached this level, the freight rate level was 105. The situation remained almost unchanged during succeeding years, as may be seen from the statistics given in Table 60.

TABLE 60. RATE LEVEL AND PRICE LEVEL ON CLASS I RAILWAYS (1924-37)

(1924-5=100)

Year	Wholesale prices*	Average rate	Year	Wholesale prices	Average rate
1925-6	92	104	1931-2	55	102
1926-7	86	102	1932-3	53	106
1927-8	86	102	1933-4	50	105
1928-9	84	104	1934-5	51	101
1929-30	81	103	1935-6	53	101
1930-1	67	101	1936-7	53	104

* Calcutta wholesale prices for calendar year.

The freight rate levels during the depression are thrown into bolder relief by taking the figures for 1929 as the base. This does not of course allow for the fall in prices which had already occurred by that year. The index numbers given in Table 61 show that freight rates on coal, owing to the surcharge,

TABLE 61. FREIGHT RATES AND PRICE LEVELS OF PARTICULAR COMMODITIES

(1929=100)

Year	Coal rate *	Pit mouth prices	Grains & oil seeds rate	Grains & oil seeds prices	Other commodities rate	Other commodities prices †
1930-1	100	102	95	79	101	82
1931-2	100	100	94	59	102	68
1932-3	108	89	94	56	105	65
1933-4	110	82	95	53	103	62
1934-5	111	75	90	56	98	63
1935-6	109	74	94	60	95	65
1936-7	111	72	92	59	99	65

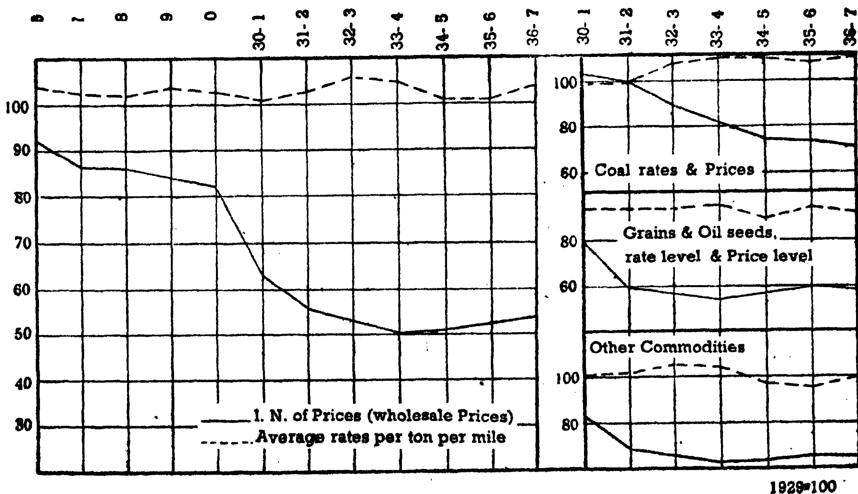
* Public coal only. † Calcutta wholesale prices.

increased to 111 in 1936-7, while during the same period the pit mouth price had dropped to 72.

In the case of grains and oilseeds, except in 1934-5 when the rate decreased to 90, it was always between 92 and 95. The trend of prices of cereals and oilseeds during the same period showed a steep decline as compared with 1929. The index number of prices in 1933-4 was 53, while that of the rate level was 95. The position had not improved to any appreciable extent even in 1936-7, when the price level stood at 59 against a rate level of 92.

The average rate for 'Other' commodities increased to 105 in 1932-3, after which there was a decrease to 95 in 1935-6. The general wholesale prices during the same period dropped to 65.

FIGURE V. RATE AND PRICE LEVELS, 1925-37



The comparison brings out the fact that freight rate levels, on account of the decline in the price level, were about 50 per cent higher. The difference was even greater in the case of coal. With so large a difference between the rate level and the price level, one might conclude that the cost of rail transport must have imposed an increasingly heavier burden on industry and trade during the depression, particularly in India where about 70 per cent of the population is directly

engaged in the agricultural industry. The freight rate level, as Professor Jackman points out,

> 'is a matter of vital concern to the agricultural community. Of course, it is also of importance to the manufacturer in ascertaining at what price he can sell his product to the consumer; but on account of the higher value and the wider diffusion of the costs of manufactured goods, the burden of freight rates is frequently not felt to be as heavy upon them as upon the agricultural products.'[11]

During the depression, with a phenomenal decline of agricultural prices, the almost stationary rate level implied relatively higher freight rates on agricultural commodities, and a correspondingly lower return to agriculturists. The problem of India's economic welfare is essentially one of increasing the purchasing power of the agriculturist. To the extent that the rate level depressed it, railways would appear to have worked in the opposite direction.

The Wedgwood Committee discussed the demand for a general rate reduction and could not support it on grounds thus expressed by them:

> 'A general reduction of charges . . . can only be looked upon as desirable from the policy point of view, either for the purpose of keeping railway charges in step with world-wide price movements, such as occurred after the post-war boom, or when railways have a large surplus in hand and are disposed to distribute it in the form of lower charges to their customers generally. Neither of these sets of circumstances exists at the present time . . . the general level of railway charges in India is low and therefore provides no argument in favour of a general reduction.'[12]

The question of an adjustment of the rate level to the price level was thus dismissed by the Wedgwood Committee. The unsatisfactory state of railway finance and their anxiety not to recommend measures which might prejudicially affect railway revenues must have influenced their judgement on this question.

It is, of course, possible to press the argument for a rate reduction too far, and even the agricultural argument for a reduction of rates may lose part of its force if the difficulties

[11] Op. cit., p. 554.
[12] *Wedgwood Committee Report*, para 123, p. 77.

of the agriculturists are viewed in the proper perspective. The picture drawn by Professor Jackman of Canadian agriculture is so true of the conditions which prevailed in India that it deserves to be quoted :

> 'Much is being said at the present time of depression, and has been said for many years, of the need for reduction of freight rates as a means of restoring prosperity to agriculture and through it to commercial and industrial business. Agriculture, the most vital and essential phase of our economic life, is pursued under most unsatisfactory conditions. A prosperous agriculture is at the foundation of prosperous industry, trade and transportation. The fact is that the railways are suffering from the same causes which have produced the agricultural distress, especially the curtailment of the markets for the excess production of the country. The railways are the farmers' best friends. Their interests are identical, and not hostile. Anything which will work for the betterment of agriculture will work for the improvement of the railways as well as the other interests of the country; and among the most important of these we would mention the extension of the country's markets, the orderly and organized marketing of products, diversified production, adequate credit facilities suited to the farmers' needs, and a more reasonable relation between the prices of what the farmers have to sell and of the manufactured products which they have to purchase.'[13]

While the argument for a strict correlation between freight rates and the price level is open to criticism, so considerable a difference as that disclosed by the statistics quoted above needed correction. In few of the agricultural countries was there, during the depression, anything like so steep a decline in prices or so great a disparity between the rate level and the price level.[14] A decrease in the rate level, narrowing the difference in the price level, would have meant a relief to the agriculturists, whose difficulties were accentuated during the depression. It was feared that that would have involved a loss of railway revenues which were already insufficient to cover railway expenditure and fixed charges. The only other course was to reduce railway expenditure, which would then have permitted a general reduction in rates. The problem of the adequacy or reasonableness of the rate level cannot

[13] Op. cit., pp. 580-1.
[14] Comparative statistics of general rate levels and price levels in certain countries

be discussed independently of railway expenditure. From what we have already seen of the general trends of railway expenditure,[15] the real difficulty lay in the inelasticity of fixed charges and the higher standards of working expenditure during the pre-depression period. Unless railways earned enough to pay their expenses and meet their fixed charges in full, their own financial stability would be impaired. The net income was for years inadequate to meet their liabilities in full. The enthusiasm for an adjustment of the rate level had, therefore, to be tempered by a consideration of the financial condition of the railways.

This chapter is, in a sense, concerned with the examination of results rather than of the influences which helped to bring them about. Tonnage, length of haul, earnings, etc., all depend on the state of industry and business, and their reaction to the cost of transportation. It is important from the point of view of railway finance to ascertain the effects of railway policies on Indian industry and trade, and the effect of the state of economic development of the country on the railways themselves. These problems can be discussed only by an examination of the rates structure and policies followed by the Indian railways. These topics are taken up in the next chapter.

of the world are given below. The base year taken for computing the index numbers is 1929.

Country	Average rate per ton mile	Prices	Country	Average rate per ton mile	Pric
U.S.A. :			Germany :		
1930	99	91	1930	103	91
1936	90	85	1936	92	76
Canada :			Italy :		
1930	99	91	1930	91	90
1936	88	78	1936	85	81
Gr. Britain :			India :		
1930	99	88	1929-30	99	82
1936	91	83	1936-7	102	65
Japan :					
1929-30	100	82			
1936-7	97	90			

The percentages stated above are worked out on the basis of the index numbers of prices and average rates per ton mile for the different countries, taken from the following sources: *Statistical Abstract of the United States*, 1938; *Canada Year Book*, 1938; *Statistics of Steam Railways in Canada; Foreign Commerce Year Book*, 1935 and 1938; League of Nations, *Statistical Year Book; Annual Report of Railways*, Japan; and *Report on Currency and Finance*, Reserve Bank of India.

[15] Chapter III.

CHAPTER VI

FREIGHT RATES AND INDUSTRIAL DEVELOPMENT

THE policy of railway rates had for years been a sore point with the public, and for our present purpose it will be sufficient to start with the diagnosis of the Indian Industrial Commission, 1916-8.[1] The report of this commission referred in detail to the effects of the prevailing railway rates on the industrial development of the country. Before the last war, traffic flowed in two major streams—raw products moving towards the ports for export, and imported manufactured articles moving upcountry from the ports. With the natural preference of railways for a large volume of traffic permitting economic handling, the rivalry of ports attracting traffic for export, and the competition of coastal and river shipping, the rates policy of railways was adjusted to meet these conditions of trade. The Holland Commission stated :

> 'the history of rate fixation reveals a desire to divert traffic from one Indian port to another, rather than a careful examination of the effect which the rate imposed would have on the total cost of conveying the goods to their port of foreign destination, and therefore on their ability to compete with products from rival sources. Presumably relevant local circumstances are duly taken into account when rates are fixed ; the point which we desire to make is that there has been a tendency to think of attracting

[1] Hereinafter referred to as the Holland Commission.

traffic to a particular railway rather than to consider whether a real necessity exists for reduction in the general interests of the country.'[2]

As an example of undue reduction of rates on exports, they quoted the case of hides, whose production was not affected by railway rates though their disposal might be. Consequently 'the grant of port rates nearly 50 per cent less than the internal rates has certainly discouraged Indian tanning, and aided certain foreign industrialists to obtain a hold on a class of raw material of which India possesses a partial monopoly.'[3]

The fixation of railway rates on imports followed much the same lines as those on exports. In view of the fact that the 'efforts of the country in future will be directed to bringing raw materials to the most finished state possible before export,' the Holland Commission enunciated the following principles for the regulation of railway rates :

(1) 'The governing principle which should be followed in railway rating, so far as it affects industries, is that internal traffic should be rated as nearly as possible on an equality with traffic of the same class over similar distances to and from the ports . . . as far as possible in the case of raw materials conveyed to, and manufactured materials conveyed from, an Indian manufacturing centre.' The acceptance of this 'principle premises more than individual concessions ; it. involves the necessity of considering from the widest possible point of view, how far the existing low rates on produce for export are really required.'

(2) 'Railways should accept the principle followed in some other parts of the world that a consignment travelling over more than one line should be charged a single sum based on the total distance.'[4]

The commission found that one of the immediate causes of low port rates was the competition between rival systems, which led them to look on some questions from an unduly individualistic point of view, such as in the case of 'block' rates,[5]

[2] *Holland Commission Report,* para 271, p. 205.
[3] Ibid.
[4] Ibid., para 272, pp. 205-6.
[5] 'Block' rates are higher milage rates for short lengths imposed on traffic moving from a station near a junction with another system towards the junction in order to travel a much longer distance over that system. In the 'scale' or 'tapering' rates, each railway treats the length of its own system as the sole basis for its charges, irrespective of the total lead.

'scale' or 'tapering' rates or some form of terminal charges. Their effect even when capable of justification was undesirable. According to the commission, 'they have accentuated inequalities, and have, on the whole, tended to operate to the disadvantage of internal traffic and, therefore, of Indian industries.'[6] Among other indirect results of the policy of encouraging traffic to and from ports were instanced the congestion of industries in the port towns and various labour difficulties which could only be rectified by a railway rate policy which would 'help to diffuse and decentralise industries, and thereby increase the availability, the comfort and the efficiency of labour.'[7]

The Acworth Committee found that the Government of India, which exercised a close and detailed control over the management of Indian railways left to companies a large measure of freedom in the matter of fixing rates and fares. As regards the allegations of undue preference, such as lower rates for export and import traffic, the committee said that the existence of such rates was unquestionable. But such exceptional rates exist in every country, and are 'justified on the ordinary grounds, not only of the economy of handling goods in large volume, but also of competition between railway systems serving the same distributing or consuming area.'[8] But in one respect Indian railways departed from the accepted railway practice in other countries. Export traffic through a seaport is usually granted rates not available to that seaport for local traffic. In countries following a free trade policy, goods imported through a port are charged lower rates for carriage inwards than for goods produced locally at the port town. The Acworth Committee pointed out: 'This practice is not, so far as we have been able to ascertain, followed in India.'[9]

[6] *Holland Commission Report*, para 273, p. 206.
[7] Ibid., para 274, p. 207. The report also referred to such complaints as 'the shortage of wagons, the inconvenient routing of traffic, unnecessary break of gauge, losses from careless handling or from dishonesty, the question of risk notes and the like.'
[8] *Acworth Committee Report*, para 150, p. 50.
[9] Ibid., para 151, p. 50.

The question of 'block' rates intended to retain the traffic originating on the home line or 'blocking' it from passing off after a short lead to a rival route was also discussed by the committee. Though no instance of existing 'block' rates was quoted, they certainly existed in the past as shown by the Broach block rates—the memory of which, in the words of the report, was 'still green in the hearts of traders all over India,'—the Buckingham Canal case and the proposal regarding the Tirumalaivasal Port.[10]

In 1922, the Indian Fiscal Commission, who recommended the policy of 'discriminating' protection discussed the subject of railway rates in connexion with the development of industries. Emphasising the importance of industrial development of the country, they referred to the question of railway rates as 'one factor which may have a considerable bearing on the lines of development,' and thought it 'most important that the development of industries at suitable smaller centres throughout the country should not be hampered by any discrimination in railway rates.'[11] Discussing the subject at greater length in the latter part of the report, the commission observed : 'It is not inconceivable that a policy of protection to industries might to some extent be nullified by injudicious railway rates, or it might be found that in consequence of such rates the tariff protection required by an industry, and consequently the penalty on the general public, was higher than it otherwise would be.'[12] They also referred to the complaints regarding rates mentioned by the Holland and Acworth Com-

[10] The South Indian Railway had an agreement with the British India Steam Navigation Company by which the latter ceased to call at certain ports and left to the railway the monopoly of the traffic. The same motive was behind the proposal to close the Tirumalaivasal port. For further details about these attempts, the Broach 'block' rates and the decline of the Buckingham Canal see *Acworth Committee Report*, pp. 50-1.

The Buckingham Canal leading into Madras was of considerable importance at one time and its traffic was diverted to the railway by the quotation of such exceptional rates by rail as to leave a very small margin of profit. The Acworth Committee also referred to the evidence tendered as regards the existence of an agreement between the South Indian Railway and the British India Steam Navigation Company, the effect of which was to induce the steamship company to cease to call at certain ports and leave to the railway the monopoly of the traffic. The Agent of the railway subsequently submitted proposals to the Government to close the port of Tirumalaivasal entirely to force traffic to the railway of which the Government was owner. Ibid., p. 51.

[11] *Indian Fiscal Commission Report*, 1921-2, p. 30.

[12] Ibid., p. 72.

mittees, and those received by them regarding lower export and import rates and higher internal traffic rates. The persistence of the complaints, in spite of the Government circular of 1915,[13] could not be entirely without foundation. They particularly endorsed the recommendations of the Holland Commission already referred to; but within the limitations specified by them, the Fiscal Commission stated that 'it is not unreasonable that special rates should be granted for a term of years to new industries, and even to others if they can make out a proper case for special treatment.'[14]

The comments of three successive committees on the subject of railway rates—two from the point of view of industrial development, and the other from that of improving the relations between railways and their customers—had the effect of impressing on railways the importance of an immediate reform of the rates structure and policy. Before discussing the developments which followed, we must deal with the classification of goods, which forms the steel frame of the rating system.

CLASSIFICATION OF GOODS

Prior to the post-war revision, goods were grouped into five classes. For explosives and dangerous goods there was an additional class, 'X'. The maxima and minima rates were charged as follows:

	Maximum	Minimum
	(pies per maund per mile)	
1st Class	0·33	0·1
2nd ,,	0·5	0·166
3rd ,,	0·67	0·166
4th ,,	0·83	0·166
5th ,,	1·0	0·166
X ,, (explosives including dangerous goods)	1·5	0·166

[13] 'In this circular it was pointed out that the establishment of industries cannot fail directly or indirectly to increase the business of the railways, and that the administrations of railways have it in their power to do much for the encouragement of new industries by the quotation of favourable rates for the carriage of the raw materials and of the finished products; and the railway companies were asked to co-operate in making a special endeavour to do all that was possible for the encouragement of indigenous industries.' *Indian Fiscal Commission Report*, p. 73.

[14] Ibid., p. 75.

This classification was in force for over a quarter of a century up to 1916-7, when the pressure of war-time demands compelled railway administrations to enhance rates within their prescribed maxima. The demands of state finance also led to the passage of the Freight (Railway and Inland Steam Vessels) Tax Act, 1917, which imposed a surcharge of one pie per maund on coal, coke and firewood, and of two pies per maund on all other goods carried by the railway administrations or inland steam vessels. As the Government of India needed increased revenue, the rate of surcharge was further increased on 1 April 1921 to 2½ annas per rupee of freight payable on all goods excluding grains and pulses, firewood, and fodder, but including all coaching traffic other than passenger.[15]

In view of the increasing costs of working during the war and after, all the railway administrations pressed for raising rates and for enhancing the maxima. Disapproving of the principle of surcharge, the Acworth Committee held that Indian railway rates and fares had always been among the lowest, if not the lowest, in the world and that a general increase was overdue. The committee stated that witnesses from all parts of India recognised that rates and fares should be increased and expressed their readiness to pay the increases provided a reasonably efficient service was given in return.

The Indian Railway Conference Association took up the matter and the Railway Board agreed to consider proposals involving an increase in the maxima or a new classification, a percentage increase or any other method to take the place of the surcharge. The introduction of telescopic scales with varying maxima and increased classes, or the retention of the existing classes with increased maxima, did not find favour with the framers of the new classification. The proposal actually put forward was to increase the classes and raise the

[15] The exemptions in the surcharge of 1917 were permitted in this surcharge also. The railway companies opposed this on the grounds that, (*i*) the surcharge was no longer required as a war measure; (*ii*) it was not treated as part of the gross earnings of the company to be shared by the company with Government like other earnings, and therefore, not in accord with their contracts; and (*iii*) if the necessity for raising rates was admitted the principle underlying the surcharge was unsound and the incidence inequitable. *Vide* K. V. Iyer, *Indian Railways*, p. 86.

maxima. This was considered the best solution and, according to this decision, four additional classes were interpolated into the existing classification by subdividing each of the first four classes. The fifth class became the ninth, and the special class X the tenth.

The new classification came into effect on 1 April 1922. In the case of the two classes into which each of the first four was divided, one was made 15 per cent higher than the old rate and the other was enhanced by 25 per cent. The fourth class and the X class under the earlier system were each raised by 25 per cent. The commodities of the older classes were allocated to the new classes either with a 15 per cent, or 25 per cent, enhancement. The new classification compared with the old stood as follows :

TABLE 62. CLASSIFICATION OF GOODS, 1922

(Rate in pies per maund per mile)

Old classification			New classification				
Class	Maximum rate	Minimum rate	Class	Maximum rate	Increase over existing class %	Increase over previous class %	Minimum rate
1st	0·333	0·100	1st	0·38	14 over 1st	..	0·100
			2nd	0·42	26 ,, ,,	11	,,
2nd	0·500	0·166	3rd	0·58	16 ,, 2nd	38	0·166
			4th	0·62	24 ,, ,,	7	,,
3rd	0·666	,,	5th	0·77	16 ,, 3rd	24	,,
			6th	0·83	25 ,, ,,	8	,,
4th	0·833	,,	7th	0·96	15 ,, 4th	16	,,
			8th	1·04	25 ,, ,,	8	,,
5th	1·000	,,	9th	1·25	25 ,, 5th	20	,,
X	1·500	,,	10th	1·87	25 ,, X	50	,,

Although the classification with the additional groups achieved the main purpose of increasing the rates, it was open to several objections. Firstly, the splitting up of the classes destroyed the symmetry of the old class rates and the relation of each new class to the next one became entirely different. The result was that the scale of class rates rising from 0·38 pie per mile to 1·87 pies per mile left widely varying gaps between each class. The 2nd class rate, which was 0·42 pie or 11 per cent higher than the 1st class rate, was in its turn 0·16 pie or 38 per cent lower than the 3rd class rate. The

4th class rate was only 0·04 pie or 7 per cent higher than the 3rd, but the difference between the new 4th and 5th classes amounted to 24 per cent. There was thus an alternation of a higher and a lower rate of increase between the classes. The result was that a change of classification for a commodity, say from 3rd to 2nd, implied a decrease of 28 per cent in the rate, just as an alteration from 2nd to 3rd, would result in a proportionate enhancement of the rate. The relation of the rate of a new class to its previous class is shown in the table above. Railway administrations would naturally hesitate to risk a large percentage of decrease and a change of classification would, therefore, tend to be limited to the classes bearing the least difference, such as between 1st and 2nd, 3rd and 4th, 5th and 6th, and so on, and not between 2nd and 3rd, 4th and 5th, 6th and 7th, etc. The limping rate of progression in the rates affected the elasticity of the classification.[16]

Secondly, the position as regards the rates for goods carried at railway risk and owner's risk was left undisturbed. The difference between the two rates took little notice of the actuarial value of the risk and the practice was to quote a lower classification for carriage at owner's risk. When the number of classes was increased to 10, the difference in class was also raised to two, so that a commodity classified at railway risk in the 6th class became 4th class for owner's risk. The unequal differences between the 10 classes referred to above made the disparity between the two rates much greater. Thus a commodity at 4th class railway risk was given 2nd class owner's risk, so that the railway risk rate was raised to some 48 per cent above the owner's risk rate. This had little to do with the actual risk involved in carrying the goods : it was to suit the scale of rates.

Thirdly, the reclassification was not sufficiently broad-based to cover the exceptional higher classes which were

[16] Compare the American classification with the Indian classification of 1922. The I.C.C. Southern Territory Classification prescribed in 1925 is as follows :

Classes	1	2	3	4	5	6	7	8	9	10	11	12
% of 1st class	100	85	70	55	45	40	35	30	25	22·5	20	17·5

It may be observed that the 1st class is the highest class rate in the American classification.

authorised on certain railways, such as for piecegoods, cotton, wool, etc., on the G.I.P. Railway on the ground that they involved an increase of the maxima to beyond 25 per cent. The railways having such exceptional classifications were allowed to secure additional revenue by increasing their exceptional classifications. Correspondingly, those bound to a lower classification had to maintain it, but were permitted to have the 25 per cent higher maximum. Except for the 2nd class, the allocation of commodities had to keep within the classification which, as compared with the maximum of the previous class, permitted an increase of not more than 25 per cent.

The minima rates were not reviewed at all, and were kept at the same level as before. The reason for fixing the maximum was to prevent the companies abusing their monopolistic position and exploiting the public. In the public interest, therefore, the maxima, as on the British railways, were also adopted here. The *raison d'etre* of fixing the minima, which are peculiar to this country, was different. The companies in India, entitled to a guaranteed rate of interest on their investment, might, to meet competition, be tempted to attract traffic by quoting rates below cost, which would result in a loss to Government and, therefore, to the taxpayer. The reasoning which was advanced to justify the enhancement of the maxima rates, therefore, applied with equal effect to raising the minima as well. With the increase in the general cost of working, the minima rates, which were supposed to have some bearing on the costs of working, should also have been increased to protect the financial interest of Government. The fact that an enhancement of the minima was not considered necessary shows that the pressure was towards permitting the railways to exceed the earlier maxima, and that the minima rates were not operative at all in the determination of the rates for commodities.

The grouping of commodities into classes is important because it serves two purposes. One is to ascertain the rate to be charged when no station-to-station or schedule rates are quoted. The second object is to fix the maxima and minima

rates per maund per mile within the limits of which all rates of whatever kind must be kept, subject to exceptions specially authorised by the Railway Board. The changes introduced in 1922 did not affect the other features of the Indian rates system. The maximum rate of a class in which a commodity is placed is deemed the ordinary rate per maund per mile for that commodity exclusive of terminals or short distance charges and tolls.

There are, of course, many cases where the rate is less than the maximum of the class to which the commodity is allocated. This practice has resulted in what are called 'adjusted' class rates. In certain cases a special rate may be quoted on a classification lower than that of the commodity. The station-to-station rates mentioned earlier are special rates between two specific points, stations or junctions on the same or different railways. They are comprehensive rates inclusive of terminals, short-distance charges, tolls, etc. A 'schedule' rate is fundamentally different and is quoted on a basis lower than the maximum of the class either on a uniform or equal milage basis or on a telescopic (cumulative) principle. An equal milage schedule rate may be 0·25 pie per maund per mile. If it varies on a telescopic principle, it may vary according to distance or weight, such as a rate up to a specified distance or weight, and a lower rate up to a further specified distance or weight, and so on.[17]

The volume of traffic carried under these exceptional rates gives them a special importance. It has been estimated that from 75 to 80 per cent of the goods traffic is carried at rates either 1st or 2nd class, or even lower, that is at schedule or station-to-station rates, leaving only about 20 to 25 per cent of the traffic for the remaining classes. Consequently some of the classes have not been effective at all.

DEMAND FOR REFORM

Although there were occasional criticisms by individual students of railway problems of the prevailing features of the

[17] I.R.C.A. *Goods Tariff*, General rules.

rates system, opportunity was afforded for a detailed examination only in 1930, when the President and Member of the Railway Rates Advisory Committee were asked to submit proposals for the revision of the Indian Railways Act, 1890. Commercial bodies and chambers of commerce availed themselves of this opportunity to represent their views on the shortcomings of that Act. The changes introduced under the Railways Act, 1921, in Great Britain, and the American system as modified by the Transportation Act, 1920, had influenced commercial opinion to a considerable extent. Thus the Indian Chamber of Commerce, Calcutta, proposed that a Rates Tribunal be constituted and, as was done in Great Britain, be empowered to draw up an entirely new classification after sounding public opinion on the subject.[18] Any changes in that classification were to be made only with the approval of the proposed tribunal. The numerous exceptions which existed under the classification of 1922 were to be absorbed into a new classification which was to be so drawn up as to be uniform for the particular groups into which railways were to be classified.[19] Other chambers also represented their views to the same effect. But the rapid decline of railway revenues with the commencement of the depression, and the anxiety to balance the budget in the meantime rendered any drastic changes in the rating system inadvisable, and consideration of these questions was deferred until conditions became normal again. The report of the President and Member of the Railway Rates Advisory Committee has not been released to the public so far.

During the depression, as we have seen already, the decline of prices and its reactions on trade and industry left railway

[18] Under the present procedure, the trading public have no opportunities to participate in the discussions concerning the classification of goods. The classification is done by the Indian Railway Conference Association, which, as the Indian Chamber characterised, 'is an unofficial body of railway representatives, who unfortunately work behind closed doors and whose proceedings are not available to the public.' *Memorandum* to R.R.A.C., 1930.

[19] Ibid. The proposed classification of the Indian Chamber of Commerce is interesting. The main sections of the classification were to be : (1) goods by goods train ; (2) live-stock by goods train ; (3) perishable goods by passenger train or other similar service ; and (4) goods other than perishables by passenger train or other similar service. The classification of goods by goods train is to be further divided into : agricultural products ; coal, coke and patent fuel ; general goods ; timber ; returned empties ; dangerous goods ; and goods of very great value.

rates relatively higher, and, in addition to a demand for a general reduction of rates, gave rise to other complaints regarding the rating system. These complaints, the existence of which was admitted by railway officials themselves, may be summarized as follows :

(1) The existence of numerous possible alternatives to the existing class rates, to the maxima rates per maund per mile laid down by the Government of India.

(2) The standard character of the class rates was impaired by the employment of the 'adjusted' class rates, lower than the maxima between a pair of stations, the use of exceptional classifications for certain commodities, and the departure, in the basic charges even when the general classification was adhered to, from the present maxima.

(3) The numerous restrictions on the quotations of individual rates such as the minima weights and distances, special packing conditions, etc.

(4) The railway routing agreements requiring particular traffic to be charged for, and consigned by, particular routes.

(5) The general adoption of the equal milage as opposed to the telescopic principle of rates.

(6) The wide differences between schedule rates on individual railway administrations for the transportation of the same commodities.

(7) The impossibility of 'firm' quotation of rates to the public on account of the absence of station rate registers.

(8) The complicated character of the rating system which required numerous documents to be consulted before rates for the carriage of individual consignments could be ascertained, and which made the station staffs charge—to avoid being penalized for charging by mistake lower than the proper rates—'safe' rates or higher rates. This practice caused unnecessary irritation and trouble for refunds—difficulties which were intensified when there was through booking of traffic over more than one railway.[20]

A conference of railway, commercial and other representatives was held on 29 July 1935, at Delhi to meet public criticism of the rating system. The Associated Chambers of Commerce stating the pressing needs of the business community, asked for simpler methods of obtaining information about rates, simplification and revision of the tariff, investigation of the liability of railways under the existing risk notes, and a review of these risk notes.

[20] A. W. Beckett, *The Indian Railway Rates Structure : The Case for Simplification*, 1935.

Mr. (later Sir) B. C. Burt of the Agricultural Research Council representing the point of view of the agricultural industry considered that there might be a good deal of scope for revision. He proposed that 'there should be a re-examination of the incidence of railway rates on the different classes of commodities with reference to their value.' By the value of agricultural produce, he meant value at the point of production, *e.g.*, the harvest time price such as every Provincial Government publishes annually.[21]

The commercial representatives at the conference were less interested in the theory of goods classification than in obtaining 'firm' rates and prompt quotations. The result of these discussions and of the efforts already put forth by the Indian Railway Conference Association was the classification introduced on 1 May 1936. The total number of classes was increased from 10 to 16, by interpolating six additional classes into the existing number, as shown in Table 63.

TABLE 63. GENERAL CLASSIFICATION OF GOODS, 1936

(Rate in pies per maund per mile)

Class	Maximum rate	Increase over previous class	Minimum rate	Class	Maximum rate	Increase over previous class	Minimum rate
		%				%	
1	0·38	..	0·100	4 B	0·72	7	0·166
2	0·42	11	,,	5	0·77	7	
2 A	0·46	10	,,	6	0·83	8	
2 B	0·50	9	,,	6 A	0·89	7	
2 C	0·54	8	,,	7	0·96	8	
3	0·58	7	0·166	8	1·04	8	
4	0·62	7	,,	9	1·25	20	
4 A	0·67	8	,,	10	1·87	50	

The revised classification certainly helped to remove some of the more serious anomalies. It permitted a wider range for the regrouping of commodities and under the practice followed provided a device whereby the difference between

[21] Amplifying this Sir Bryce stated : 'What means most to the agriculturist is the price which he gets for his produce and therefore it is the railway freight on his produce which is of the greatest importance to him. Second in importance comes the railway freight on the necessities for production, such as manures and implements; this is definitely second in importance in India. And third comes the railway freight on those products in which he is only interested as a consumer. Now if we look at railway eights from that point of view . . . there may be a good deal of scope for revision.'

the owner's risk and railway risk rates could be reduced. But while the classification afforded scope for improvement in these directions, other defects inherent in the system itself were left largely untouched. The complaints of the business community regarding the present rating system were directed against the operation of (1) the risk rates; (2) the maxima and minima rates; (3) schedule rates; (4) discontinuous milage; and (5) terminal charges. Little has been done since 1937 to remove them, and after the present war, they are likely to demand immediate attention. We may, therefore, proceed to discuss them in some detail in the same order.

RISK RATES

The revision of the risk note forms introduced on 1 October 1924, imposed on railways a measure of responsibility greater than the earlier forms.[22] The difference between the owner's risk and the railway risk was narrowed down by the interpolation of the additional classes between those which had broad gaps between them. But the principal objection was that the difference between the two rates was not a true evaluation of the risk undertaken by railways in the transportation of freight. In the United States, railway undertakings are prohibited by law to contract themselves out of any liability from damage or loss. The Interstate Commerce Act specifically states :

> 'That any common carrier, railroad or transportation company ... shall be liable to the lawful holder' of a receipt or bill of lading for the full actual loss, damage or injury to such property caused by it, and 'no contract, receipt, rule, regulation or other limitation of any character whatsoever shall exempt such common carrier, railroad or transportation company from the liability hereby imposed.'[23]

[22] The old Risk Note Form B, the principal form, exempted the railways from responsibility for any loss, destruction, deterioration, or damage except in regard to the loss of a complete consignment or of one or more packages thereof due either to theft or wilful neglect of the administration or its servants. The new form, while confining the administration's responsibility to cases of non-delivery of a complete consignment or any part thereof, or of pilferage from a consignment, stipulates that in these cases the administration shall disclose to the consignor how the consignment was dealt with throughout the time it was in its possession, and the burden of proof of misconduct is laid on the consignor.

[23] Section 20 (11).

The provisions of the section have been extended to motor transport also under the Motor Carrier Act, 1935. The element of risk has not affected the rates structure in the United States.

The practice in Great Britain, which has had considerable influence on the Indian system, permitted risk rates, which before the 'appointed day' represented a difference amounting to 10 to 20 per cent. The Railways Act, 1921 changed this practice completely. According to the new act, the margin of difference was limited to the difference in the risk involved. It was prescribed that the extent of this margin should be 'such as in the opinion of the (Railway) rates tribunal is fairly equivalent to the amount by which the risk of the company in the case of the merchandise in question differs under the two sets of conditions.'[24] Since the arrival of the 'appointed day', practice has been brought into line with theory, and the difference from the standard charges when merchandise is carried under owner's risk has been reduced to smaller proportions. The reductions under this practice[25] for the owner's risk rates are as follows :

Traffic marked	*a*	$2\frac{1}{2}$ %	Traffic marked	*e*	$7\frac{1}{2}$ %
,, ,,	*b*	$3\frac{3}{4}$ %	,, ,,	*f*	$8\frac{3}{4}$ %
,, ,,	*c*	5 %	,, ,,	*g*	10 %
,, ,,	*d*	$6\frac{1}{4}$ %	,, ,,	*h*	$12\frac{1}{2}$ %

It has already been stated that in spite of the improvements effected, the recent changes in the Indian classification still left a substantial margin between the two risk rates. Taking the difference of two classifications as representing the margin between the owner's risk rates and railway risk rates, the rates might vary between 7 and 16 per cent, and in the higher classes even up to 35 per cent under the classification of 1936. In the case of the schedule rates, generally

[24] Railways Act, 1921, Sec. 46(3). In the General Classification 'the owners' risk rates were known as *x*, *y* and *z*, carrying reductions of 10, 15 and 20 per cent respectively .... In reality these reductions often bore little resemblance to the actual losses experienced, and the owners' risk rates . . . came to be looked upon as a good medium for bargaining between the trader and the railway. Thus, if a trader on the one hand maintained that a certain commodity should really be classified as Class 1, while the railway maintained on the other hand, that it should be classified as Class 2, after considerable argument and bargaining it often resulted in the railway suggesting a 2 *y* rate, which was 15 per cent below the Class 2 rate and yet was somewhat above the Class 1 rate.' C. E. R. Sherrington, *Economics of Rail Transport in Great Britain*, Vol II, p. 106.

[25] Ibid., p. 107.

quoted at owner's risk, the corresponding railway risk rate would be the class rate, which might be much higher.[26] The position as regards the station-to-station rates also remained the same. In addition to this large difference many other factors limited considerably the trader's option of choosing between the owner's risk and railway risk rates.

The present position in regard to the risk rates may be summed up thus. Indian railways may not quote alternative owner's risk rates at all. There is nothing in the Indian Railways Act to compel the railways to quote reduced rates on owner's risk conditions. Section 72(2) of the Act leaves it open to the railways to limit their responsibility as bailee for the loss, destruction or deterioration of goods delivered to them for carriage by an agreement with the sender on owner's risk rate conditions. If a railway administration does not wish to limit its liability by the quotation of reduced rates at owner's risk, there is nothing to compel it to do so; nor is there anything in the Act laying down a principle for the fixation of the owner's risk rates. In *Bengal Nagpur Cotton Mills Ltd.* v. *The N.W., G.I.P. and B.N. Railways*, the Railway Rates Advisory Committee observed:

> 'In the present state of affairs on Indian railways, the fixation of rates in regard to risks is, we feel, somewhat arbitrary and unsatisfactory, and whether reduced owner's risk rates should be quoted in all cases where rates are quoted for damageable merchandise at railway risk, and vice versa, and how the difference between railway risk rates and owner's risk rates should be fixed, are, in our opinion, questions requiring investigation, with a view to allay the discontent which, we think, exists on the subject among the public today, and we invite the Government's attention to the matter.'[27]

[26] The Wedgwood Committee discussing the risk rates stated: 'Flour, for instance, is normally carried at a schedule rate, owner's risk. On the G.I.P. Railway the charge for 600 miles would be approximately Re. -/14/- per maund. If the sender wishes to forward the flour at railway risk he must pay the class rate, which for the same distance is Rs. 1/6/- per maund, or 57 per cent above the owner's risk level.... The owner's risk rates are used as a matter of course, but when a trader finds that in individual cases they weigh hardly upon him, he enquires upon what terms the railway will take the risk, and is referred to the railway risk rate already existing. This, for the reasons already explained, may be considerably higher than the owner's risk rate—to such an extent indeed, as to be prohibitive—and the trader therefore finds himself compelled to continue forwarding his traffic at owner's risk.' *Wedgwood Committee Report*, p. 82.

[27] R.R.A.C., Case XLIV. *Report*, 1935, para 67, p. 38. In some cases the railways took the benefit of the doubt in their own favour and against the trader. The committee pointed out in this case that 'although on each of the two alternative routes there are portions over which no reduced owner's risk rates are quoted, the risk note form B...

The difference in the legal position of railways in India, where they are not, as in England, insurers of goods entrusted to them, has rendered them liable only for negligence or misconduct of their servants. This has made the theory of risk rates in India rather anomalous in practice. The complaints of the trader have been particularly persistent as he considers the present liability of railways for negligence only and for furnishing information as to how the goods have been dealt with practically valueless. The Wedgwood Committee endorsing the principle that the difference between the two rates 'must fairly reflect the amount of risk involved,' expressed their opinion 'that the Indian trader has some claim for consideration in this matter and that the railways could meet his wishes without serious sacrifice of revenue.'[28] The committee suggested the study of the British practice 'with a view to the voluntary adoption of a similar solution suited to the special conditions of India.'

With the development of alternative forms of transport, the railways can ill afford to leave their customers in a state of dissatisfaction. The need to clarify the unsatisfactory character of the risk rates is clear. One of the urgent measures of reform is to ascertain the insurance value of the risk involved in the carriage of the different damageable commodities under the present system of carrying freight and bring the law and practice into line with that of the improved procedure on British railways. Since owner's risk rates are really the effective rates and railway risk rates only paper rates, there appears to be comparatively little financial risk involved in adopting a more accurate system.

is made out as covering the entire journey, ... even over such portions of the routes where no reduced owner's risk rate is quoted, and this results in those railways which quote no reduced owner's risk rates obtaining the protection of the risk note.'

[28] The Wedgwood Committee found that 'the Indian trader has an advantage over the British trader (in regard to class rates) because of the higher percentage rebate allowed to him when he bears the risk himself. On the other hand, in regard to station-to-station rates, the British trader has an advantage over the Indian trader in that, where a rate carrying one set of conditions is in operation, he may demand a corresponding rate bearing the other set of conditions.' But the facts cited in the text suggest that the difference between the railway risk and owner's risk rates acts more as a deterrent against traffic passing under railway risk. It tends rather to force than to encourage traffic to move under owner's risk. *Report*, para 129, p. 83.

Informed opinion on the subject of risk rates appears to discount the importance attached to risk in classification and rates problems. The report of the Federal Coordinator of Transportation, United States, referring to this subject states :

'The element of risk of loss or damage to the freight looms large in many classification controversies, but apparently is actually of small importance. It is a factor capable of fairly exact appraisal .... There is little need to confuse this factor as an element of classification. It ought to be treated for what it is—insurance against risks ordinarily incident to transportation. This can be accomplished in one, or perhaps a combination, of two methods. It can be ignored and treated as a common overhead of all transportation or it can be separated from the transportation rates and priced separately as an insurance premium is priced.'[29]

MAXIMA AND MINIMA

The maxima and minima feature of the rates system has also been left untouched. The objections mentioned earlier in connexion with the partial revision of 1922 have not, with the passage of years, become of less moment. It was all very well for Government to impose a regulation of that type when state-managed railways were the exception and company management the general rule. When the State had taken over the East Indian, Great Indian Peninsula and Burma Railways, for direct management, the *raison d'etre* for such a financial safeguard disappeared, at least on the state-managed railways. The Railway Board could not have maintained two fundamentally different rate systems, one on the state-managed railways and the other on the company-managed railways ; or it might have rightly hesitated to embark on too rapid a change from current practice. These considerations may have justified the policy of not altering the rating system prior to 1924. But the period since the separation of finance was essentially one of different ideas. The Government of India (Railway Department) showed a better appreciation of their own powers as the controlling authority under the contracts with the companies, and the company-managed

[29] *Freight Traffic Report*, Vol. I, para 43, pp. 32-3.

lines had to keep pace with the state-managed railways in many directions. They had, for instance, to conform to the principles of reasonableness of rates adumbrated by the Railway Rates Advisory Committee, constituted in 1926. The hesitation to remove this anachronism—the maxima and minima—is, therefore, surprising. The company-managed railways endeavoured to support most of the policies initiated at the instance of the Railway Board, such as in the matter of recruitment, purchase of stores, etc., on all of which they would have been well within their contractual rights to have disagreed and differed.

The main criticism against the maxima and minima system is that it leaves too wide a margin for individual railway administrations to fix their rates. How wide this margin is between the maximum and the minimum of each of the present 16 classes may be seen from the percentage increases up to which the railway administrations are at liberty to fix their rates for commodities above the minima. In the following table is given the percentage relation of the maxima rates of the different classes to their corresponding minima.

TABLE 64. PERCENTAGE RELATION OF MAXIMA TO MINIMA CLASS RATES

Class	Minima*	Maxima*	Increase	Percentage relation to minima
	(pies per maund per mile)			
1	0·100	0·38	0·28	380
2	,,	0·42	0·32	420
2 A	,,	0·46	0·36	460
2 B	,,	0·50	0·40	500
2 C	,,	0·54	0·44	540
3	0·166	0·58	0·414	349
4	,,	0·62	0·454	373
4 A	,,	0·67	0·504	404
4 B	,,	0·72	0·554	434
5	,,	0·77	0·604	464
6	,,	0·83	0·664	500
6 A	,,	0·89	0·724	536
7	,,	0·96	0·794	578
8	,,	1·04	0·874	626
9	,,	1·25	1·084	753
10	,,	1·87	1·704	1126

* I. R. C. A. *Goods Tariff.*

It will be noticed that the discretion in the hands of the railway administrations is considerable. The 1st class rate shows that the maximum is about four times the minimum. The margin extends to 5½ times the minima for the next four classes. The other classes provide an even wider range of variations. Thus for the 8th class, the difference amounts to that between 0·166 to 1·04 pies. Obviously, the railways can fix in this class an infinite number of rates, the difference amounting to as much as six times the minima. That the fixing of the maxima is of doubtful utility to safeguard the public interest was perceived long ago, when there was greater reason in the fixing of a minimum in India with the guaranteed railway companies exposed to the temptation of unduly forcing down rates. The theory of prescribing upper and lower limits and allowing unfettered discretion to individual administrations to fix whatever rates on particular commodities they deemed best has broken down in practice. Professor Hadley observed that 'every careful student of the question, from Morrison, in 1836, down to the committees of 1872 and 1882 (in England), has come to the conclusion that fixed maxima are of next to no use in preventing extortion,' a statement which the late Sir William Acworth himself endorsed in his discussion of the problem.[30] There seems, therefore, to be no doubt that the maxima and minima serve little purpose at the present time.

In view of these considerations, the proposal to have 'standard charges' as in Great Britain has received considerable support in this country. It is desirable to adopt some norm for railways to fix rates. One practical method may be to frame the standard rates on the basis of the present effective rates. It is probable that the public may expect too much from a change of system and may need to be reminded that in Great Britain the standard charges are in a majority of cases only paper rates; the practice has been to quote exceptional rates lower than the standard rates. The change in terminology will be helpful in putting the whole

[30] *Elements of Railway Economics*, 1924, pp. 146, 161.

system on a basis which takes facts as they are and not as they might have been.

SCHEDULE RATES

The class rates—the maximum rates against each of the sixteen classes—according to official estimates account for only about 20 per cent of the goods traffic receipts. The remaining 80 per cent is from traffic charged at rates below the authorized maxima, namely, the schedule rates and station-to-station rates. The schedule rates have given rise to complaints on the score of complexity and surprising variations in their application. The Wedgwood Committee quoted the case of cement, which was carried by twelve Class I railways on seven different schedules, so that the charge for 300 miles varied from 51 pies per maund to 114 pies per maund. Similarly, salt was carried on ten different schedules and the same was true of grains and pulses.[31]

The schedules were prepared when the relations between the different railway administrations were less intimate and when each railway built up its schedules according to its own individual requirements and circumstances. Some differences are always bound to exist from the very conditions of railway working. Occasions also do arise frequently enough justifying different schedules, not only between different railways but on the same railway itself for the same commodity. Rates have to reflect differences in the cost of operation. As the Wedgwood Committee put it: 'Costs may be widely dissimilar on different sections owing to gradients or gauge; while scarcity of traffic may warrant a higher schedule of rates, just as density of traffic may make a lower schedule remunerative. The demand for a uniform schedule for each commodity is unreasonable, and particularly so in a vast country like India where the conditions vary so remarkably between one district and another.'[32] But that there is some basis for the charge of

[31] *Wedgwood Committee Report*, para 127, p. 79.

[32] Ibid., p. 80. *Cf.* 'Complete uniformity in class and commodity rates, as the [Interstate Commerce] Commission recognizes, is impossible if not undesirable. Operating

complexity is confirmed by the Wedgwood Committee who concluded that 'the diversity of schedules on the Indian railways cannot altogether be justified by considerations of this character.' They urged a policy of simplification to be pursued energetically 'with the ultimate object of reducing the number of schedules applicable to each commodity concerned to the minimum which can be justified on definite commercial grounds.'[33]

DISCONTINUOUS MILAGE

The Indian rates system, as stated at the beginning of this chapter, was also criticised on the ground that it did not adopt the telescopic principle on continuous milage. The conclusions of the Industrial and Fiscal Commissions were to the effect that the rating practice ought to allow for the fact that railways operated on the principle of diminishing costs with every increase in the lengths of haul.

We may now refer to a feature in the Indian railway rates practice which has exerted a powerful influence on the general rates structure. Indian railways, as the Rates Advisory Committee pointed out in one of their reports, 'desire to be treated as separate units in rate-making, urge differences in their cost of working, in their revenue position in the staple commodities on which they live and oppose through rates on a telescopic or other basis, treating the whole distance of the run as one; and while doing so, they adopt at the same time the position of the unity of structure of the system as a

and financial conditions are not uniform in the different regions of the country. For example, the factor of comparatively light traffic density has been held to justify higher rates for the upper half of the lower peninsula of Michigan and the upper portion of New England .... Commodity rates by their very nature cannot be uniform throughout the country. They are explained by exceptional conditions, such as the volume and character of traffic, or the competitive conditions which may exist for a particular railroad in a given territory.' H. G. Moulton and Others, *American Transportation Problem*, pp. 142-3.

[33] *Wedgwood Committee Report*, p. 80. The report adds : 'As long as the present situation lasts it will be a weakness in the railway position, and will tell against the railways in their endeavour to win the support of the trading public. It is in our view incumbent on the railways to work steadily in the direction of simplification and to lose no opportunity of establishing themselves in a more logical and defensible position. The problem no doubt calls for the best experience of the rates experts of the different administrations if a satisfactory solution is to be found, but we would urge that the movement as a whole should receive its impulse from a higher quarter, and that the Railway Board should give it their special attention and encouragement.' Para 127, p. 80.

whole mainly from the revenue-earning point of view and that it would be dangerous to treat them as distinct units.'[34] The existence side by side with the state-managed railways of company-managed railways with their contractual rights led to a situation where each railway system endeavoured to preserve its individuality to such an extent that the operation of the telescopic scale for passenger and goods traffic alike tended to be confined to its own limits. The Indian Railways Act, 1890, is silent on this point. There is nothing in it to prevent railways from treating themselves as separate and independent units for rate making or to compel them to regulate their individual rates on the bases of rates charged on other systems or to have regard to the total lead of the traffic or to the lead of the other systems in fixing their portions of the rates for through traffic. There is equally little in the Act to require the railways to adopt telescopic rates. The desire to make their revenue pay their way and the policy of the Government for a long time—in fact almost from the beginning—to interfere as little as possible with railway administrations, led to the development of individual systems which yielded to uniformity of practice only in exceptional instances, as in the carriage of coal, or when there was a pressure of competition in a common territory or alternative competitive routes. This individualistic attitude not infrequently led to the levy of maximum charges on short leads to another railway and lower rates to encourage longer hauls over the home line.

The complaint of discontinuous milage was raised only against some schedule rates. Other schedule rates and class rates, it may be explained, are not telescopic, and the station-to-station rates are lump sum quotations. But as an appreciable portion of the goods traffic passes on schedule rates, the range of traffic affected is considerable.[35] The Wedgwood Committee found it 'difficult to resist the contention that, apart from break of gauge and transhipment, the natural and

[34] R.R.A.C., Case IV. *Kesoram Cotton Mills & Four Others* v. *The N.W. and E.I.Rys.*, 1929, *Report*, p. 11.
[35] *Wedgwood Committee Report*, para 128, p. 80.

logical method of calculating the rate is upon the throughout distance, not upon a series of "discontinuous" distances.' 'Here too,' they said, 'there is some ground for criticism of the rate system, and the criticism cannot be ignored. It applies most strongly in the case of exchange of traffic from one state-managed system to another, and will increase in force if more systems are transferred from private to state-management.'[36]

The difficulties which present themselves against a program of immediate adoption of the telescopic basis are not to be minimised. The switching over to the telescopic rates may prove to many sections, at any rate for the immediate future, a measure of doubtful gain. The telescopic principle implies that (*a*) the railways should be treated as one unitary organization for the purpose of the fixation of rates for through traffic ; (*b*) rates should be fixed on a telescopic basis ; and (*c*) in the case of through traffic, telescopic scales should be applied on the continuous milage of the through lead and not separately on the milage of each railway concerned in the lead.

The adoption of such a policy has disadvantages as well as advantages. It would tend to intensify market competition by facilitating access to distant markets and giving the public the widest possible choice and the benefit of lower prices which such competition would bring. But, as the Rates Committee pointed out, it would also 'bring about considerable disturbances in the trade conditions which have come into existence on the basis of the present rating structures, and thus cause material loss to some industries, which are near the markets.' The effect on railway revenue may prove unfavourable. The loss of revenue on long distance traffic from a change to the telescopic scales may necessitate enhancement of rates on short distance traffic which would react adversely on industries located near consuming centres.[37]

[36] *Wedgwood Committee Report*, ibid., para 128, p. 81.
[37] R.R.A.C., Case XLIV. *Bengal Nagpur Cotton Mills Ltd.* v. *The N.W., G.I.P., and B.N. Railways* discusses this aspect of the problems in detail. See *Report* para 11, pp. 8-9.

The economic effects of a change to telescopic scales will be largely governed by the character of the milage gradations in the classification and the rapidity with which the initial rate tapers off with the increase in the distance. The probable reduction in the income will have to be countered by an increase in the level of rates. It is interesting to observe that at least some businessmen are aware of this and are prepared to shoulder the additional burden.[38] On the other hand the possibility of new and sudden market competition, presence of new rivals whom the present rating system had kept away and the loss of markets to present interests might well create an economic situation too serious to be hazarded. These considerations indicate that the transition from the present system with all its shortcomings may necessarily have to be slower and more deliberate.

Secondly, there are other practical difficulties which also stand in the way of the introduction of telescopic scales. The question is not one 'merely of calculating the rate continuously for the throughout distance instead of discontinuously for the two or more sections on different systems: the schedules applied on the different systems are in many cases themselves different.'[39] In some degree, therefore, as the Wedgwood Committee pointed out, we are thrown back on the more general problem of simplification. But even simplification of the schedules is not likely to carry one far in meeting public criticism against discontinuous milage. In place of many diverse schedules on the different railways, it may be possible to evolve without undue disturbance a schedule which fairly

[38] The Indian Chamber of Commerce, Calcutta, appeared to be willing enough to meet this. They stated in their memorandum to the President of the Railway Rates Advisory Committee: 'The probable loss in income as a result of the adoption of the principle of continuous milage and of the milage gradations can be estimated and its percentage of the total income of the railways taken as an indication of the extent to which it would be necessary to increase the existing level of rates and fares in order to ensure the present rate of return from railway investments.... The increase on English Railways was one per cent and a half; it will be more on Indian railways, but in view of the economies of grouping, the simplification of tariffs, and of tariff accounting etc., it could be safely estimated not to exceed in any case 5 per cent specially as the percentage of through to local traffic in India is much less than in England. The traders in India could well emulate their confreres in England and accept an increase in the short distance freights in order to ensure very much reduced freights on long distance traffic.' *Memorandum* pp. 29-30.

[39] *Wedgwood Committee Report*, para 128, p. 81.

balances gains and losses. But this will not be possible in the case of the telescopic principle, which implies rate reductions. As there is no ground to expect a countervailing business, the Wedgwood Committee concluded 'the losses might indeed be so heavy as to cripple railway finances, and we can see nothing in the circumstances to justify such a risk being taken.'[40] As the hardship involved in the present position was deemed to be 'not of so urgent a character,' the committee recommended the quotation of station-to-station rates 'nearer to the figure of the through rate as calculated on the "continuous" principle' in such cases where the circumstances demanded.[41]

The Wedgwood Committee were justified in adopting a cautious attitude from the point of view of railway finance at the time of their enquiry. When railways had not emerged from the era of deficits, it was no time to propose far-reaching changes, the financial effects of which were extremely uncertain. But the solution proposed offers no assurance of prompt and adequate relief to the trader who has to resort to the tardy and tedious process of negotiations with individual railways, reinforced if necessary by a threat of appeal to the Railway Rates Advisory Committee. That the difficulties created by the discontinuous milage are real and serious will be clear from the effects of the present rating systems on certain industries discussed in the following pages.

Thus the efforts which culminated in the new classification of 1936 left out of account altogether the problem of telescopic scales on continuous milage. The increasing emphasis on internal production and trade as against export and import trade in India is likely to favour, if not actually precipitate, the gradual adoption of telescopic scales on the cumulative milage basis.

TERMINAL CHARGES

The rates levied for the carriage of commodities sometimes include a terminal charge to compensate the railway

[40] *Wedgwood Committee Report*, para 128, p. 81.
[41] Ibid.

administration for services rendered at the terminals. Although the law in India has generally followed English law on the subject, there has been some difference in practice.

According to the Railways Act, 1921, exceptional rates may be disintegrated into charges for conveyance, station terminals, service terminals and accommodation provided, and services rendered at or in connexion with a private siding.[42] The Railway Rates Tribunal has also approved of a standard terminal varying with the station terminal and the service terminal. Except for the first five classes of the English classification to which they do not apply, service terminals show separate charges under the four heads, loading, unloading, covering and uncovering, under each of the remaining classes.

The problem of terminal charges has not arisen at all in the United States, as the American railway rates have been recognized as covering the full service which the carrier gives, namely, furnishing the car, a place at which to load it, the conveyance of that loaded car and its terminal delivery.

The position in India is rather nebulous. There are no scales of maximum terminal charges in India. Nor is there a differentiation between the charges for station accommodation and the services rendered. Section 43 of the Indian Railways Act, 1890, no more than recognises the right of railways to levy reasonable terminals and it has been optional with railways to charge or not to charge. The defects of the existing system are readily summarized. The present charge does not distinguish between service and station terminals. Barring the case of special terminals, the size of the station or the nature of the facilities provided appears to have no bearing on the charge imposed. Nor, apart from such low grade traffic as coal and grains, is any allowance made for the *class* of commodities carried. In many cases a 'double' or 'higher than single' terminal is charged at one end even where only one station is used—that is irrespective of whether the traffic is local or through. What is more surprising is that even when

[42] Sec. 40(1).

no regular terminal accommodation or service is provided the trader has to pay the full terminal charge. What is even more exasperating is that he has to pay it even when the cost of loading and unloading is borne by him.[43]

Nor is the practice uniform on all railways. Thus, the mere transfer of the Naini-Jubbulpore section from the E.I. to the G.I.P., on 1 October 1925, led to the imposition of a terminal charge of four annas per ton of kiln coal received by the Central Provinces Portland Cement Company from the Bengal area. Both the railways were state-owned and state-managed, and the additional levy which should have been justified on economic grounds was supported merely on the basis that it was entirely within the scope of the powers and in line with the practice of the G.I.P. It was not remitted by the Railway Board, although the Railway Rates Advisory Committee had recommended it.[44] In a more recent case also, the committee commended for 'the consideration of the Government of India the desirability, in the interests of the railways and traders alike, of clarifying the Indian law on the subject of terminals at an early opportunity if it be the intention to retain terminal charges as such.'[45] The fact that it is entirely optional with the railway administration to charge or not to charge vastly increases its capacity to discriminate. The levy of the terminal may be used effectively to block traffic. The revision of the rating system in 1936 has also failed to take note of the anomalies created by the system of charging terminals.

RAILWAY RATES AND INDUSTRIES

The effects of railway rates on trade and industry are far-reaching and those interested in the development of large scale industries in India have always looked upon railway rates as a powerful instrument of assisting it. The establish-

[43] For a more detailed examination of this point see K. C. Srinivasan, *The Law and Theory of Railway Freight Rates*, 1928, pp. 378-9.

[44] R.R.A.C., Case II. *The Central Prov. Portland Cement Co., Ltd.*, v. *The G.I.P. Railway*, 1927.

[45] R.R.A.C., Case XLV. *Messrs. Martin & Co.* v. *The E.I.Ry.*, p. 44.

ment of manufacturing industries in India offers a solution to many of our economic problems, and is, therefore, recognized as essential to the progress of the country. The influence of the present rates structure and rates policy on Indian industry needs to be examined from the point of view of India's economic progress. Limitations of space and data alike preclude anything like a detailed survey. But certain representative industries may be considered as illustrative of the effect of the cost of rail transport on their prosperity.

Coal industry

Probably the most remarkable instance of an industry fostered and sustained by the influence of cheap freight rates is the coal trade. The importance of the coal industry has already been indicated. Coal, coke and patent fuel represent about 30 per cent of the originating traffic on Class I railways. Earnings from coal amount to about 15 to 17 per cent of total income. The natural distribution of coal in India is concentrated in Bengal and Behar and, till 1931, 94 per cent of the total production came from the coalfields of Bengal and Behar, and the bulk of the coal traffic must consequently consist of movements from this region to different parts of the country. The demand for coal is mainly from railways and manufacturing industries. The use of coal for domestic purposes is only a very small proportion of the total consumption in India. The consumption of coal attributable to railways is about a third. The iron, steel and brass foundries (including engineering works) use about 21 per cent; cotton and jute mills about 10 per cent; inland steamers and bunker coal about 7 per cent; and only about 25 per cent of the total supplies is utilized for all other industries.

The coal trade had two principal difficulties in establishing itself in the different markets in India: the great distances to which it had to be transported—to Bombay, Madras, Karachi and other places—and the competition of cheaper foreign coal. During the seventies, despite the proximity of the collieries, even the Calcutta market could not be called their own and

English coal was sold cheaper than domestic fuel. The difficulty in supplying Bombay and Madras, more than a thousand miles away, in face of cheaper imports by sea from England and latterly from South Africa, may be imagined. The expansion of the coal trade and the supplies of Indian coal during the last twenty years at almost every manufacturing centre and for every railway in India, have been entirely the result of railway policy which granted facilities and particularly cheap rates for coal.

It is significant that coal was the only commodity accorded the benefit of the telescopic scale of rates on a continuous milage basis. The development of coal rates was profoundly affected by certain factors. The proximity of the port of Calcutta to the coalfields had a dominating influence on the direction of traffic, and facilitated export of coal for which the port provided the best facilities available.[46] The steamships could supply other ports in India at a much lower rate than could be done by rail. A large volume of coal consequently found its way to Calcutta. Part of the production was also sent up-country by rail to other consuming centres of railways and industries outside the coal producing area. The desire to supply Bombay also had an influence over the rates for coal destined to that port.

The extent to which railways have assisted the coal industry may be illustrated from the coal export trade. Export interests were given a rebate on export coal for a long time. As a result of the recommendations of the Coal Committee of 1924 the rebate was enhanced and this had some effect on the volume of coal exported. The annual average during the quinquennium, 1921-5, was only 182,000 tons, against 620,000 tons during the quinquennium, 1916-20. Exports rose from this low level to an average of 601,000 tons during the succeeding quinquennium 1926-30. A decline set in during subsequent years. In April 1926, a general reduction of 10 per cent was

[46] The exports were primarily to Aden, British East Africa, Mauritius, Ceylon, Java, Straits Settlements, Sumatra, and Hongkong. In 1920 they touched 1¼ million tons and Rs. 1½ crores.

granted which, Sir Charles Innes, the Commerce Member, claimed, brought the long-distance rates to a level 'not very much higher than the pre-war rates.' But for some leads the rates, even after the reduction, disclosed some leeway to be made up before attaining the pre-war level. In 1929-30 there was another reduction on long-distance traffic exceeding 200 miles. With the commencement of the depression a surcharge of 15 per cent was imposed on coal, which was reduced to 12½ per cent during 1935-6.

The extent to which coal traffic has been conditioned by the special rates charged by railways will be clear from the fact that the average rate per ton mile of coal has been so low as to yield only a very small amount of profit to the East Indian and a loss to the Bengal Nagpur and Great Indian Peninsula Railways, even without taking the interest charges into account. The following figures[47] indicate the position of each railway for selected years :

COST OF COAL TRANSPORTATION*

(In pies)

	Cost per ton mile excluding interest			Cost per ton mile including interest			Cost per ton mile average rate (coal)		
	B.N.	E.I.	G.I.P.	B.N.	E.I.	G.I.P.	B.N.	E.I.	G.I.P.
1922-3	2·85	2·93	5·01	4·44	4·25	6·82	2·54	2·90	2·68
1924-5	3·01	2·59	3·96	4·88	4·34	5·98	2·69	2·78	2·58
1929-30	3·47	2·46	4·06	5·19	3·91	6·82	2·38	2·67	2·35
1935-6	2·60	2·43	3·59	4·19	3·86	5·47	3·03	2·88	2·49

**Railway Board's Reports*, Vol. II.

Heavy chemical industry

The exceptional character of coal traffic justified special treatment on account of its transportation characteristics and low value. Other industries have not, however, received such careful attention and co-operation from the railways. The development of new industries may, under certain

[47] The cost figures quoted here are not the true costs, but only averages ascertained by the separation of passenger and freight service expenses on an assumed formula, and too much reliance should not be placed on these cost figures. It may be added that the interest charges for these figures were 4½% in 1922-4, 5½% up to 1933-4, and 4½% thereafter.

circumstances, prove to be largely a question of freights. The Indian Tariff Board found in their enquiry into the heavy chemical industry that railways have it in their power to give or cancel protection to industries by quoting special rates or manipulating rates within the wide margin left between the maxima and minima. This has clearly obvious disadvantages to the manufacturer, who, apart from the uncertainty regarding the freight the industry may obtain, depends for his success on satisfactory negotiations with individual administrations, which, as the Board stated, 'even if practicable, can seldom lead to uniformity or create that security (in his mind) which is essential to induce him to invest his capital in large undertakings.'[48]

The railway classification of commodities was also not helpful to the heavy chemical industry. The Board confessed their inability to follow why copperas, alumino-ferric and alum were classified at R.R. under class 1 of the railway rates, while Glauber's salts, Epsom salts and sodium sulphide were entered under class 3, although these chemicals had the same value and no great difference among them in regard to bulk or risk in handling.[49] To take an entirely different instance, according to the principle that a raw material of almost universal use for industrial purposes should bear the lowest possible rate, coal pays the lowest rate on a telescopic basis on continuous milage. In 1929 it worked out below 0·1 pie after 450 miles, and 0·07 pie at 900 miles and over. But fertilisers were charged minimum freight of 0·1 pie per maund per mile irrespective of distance. In view of the importance to an agricultural country of cheap fertilisers, it is not clear how a differentiation was justified between a raw material for industry and one for agriculture.

The Tariff Board therefore concluded that one of the major factors deciding the future of the heavy chemical industry was the scale of rates to be charged on its products. Even

[48] *Indian Tariff Board Report on the Heavy Chemical Industry*, p. 90
[49] Ibid.

in the event of a permanent loss on some chemicals through reduced rates, the objection, the board stated, would not be decisive, as the problem had to be examined from two points of view: the possibility through the reduction of freight of additional traffic and thereby increased earnings; and whether it would be on the whole in the national interest to create the particular industry. In the case of heavy chemicals it was found that they satisfied both conditions and the board believed that 'the possibility of organizing the chemical industry on a satisfactory basis depends to a great extent on the fixation of lower railway freights.'[50] In view of the possibility of the protection afforded to an industry being neutralized by a variation in rates, they laid down that 'no increase in freights should take place during the period of protection without reference to the Government of India.'[51]

Other industries

The case of the coal and heavy chemical industries may be considered exceptional, as one is a basic industry and the other a new enterprise seeking facilities and assistance for expansion. We may now take the cotton industry which is among the oldest and well-established large-scale undertakings in India. The freight rates for cotton were discussed in the *Kerosam Cotton Mills and Four Others* versus *The North Western and the East Indian Railways*, one of the earlier cases before the Railway Rates Advisory Committee. The mills were situated in Bengal and were dependent for their raw material on the Punjab. Examining the question as to the treatment of the raw material *per se*, it was found that the manufactured product, higher in value and more refined, and the raw material, subject to a wastage of 25 per cent, were moved at the same rates. The owner's risk rate of the 4th class, the effective rate, was provided for piecegoods, while only the 4th class rate at railway risk was offered for cotton. Prima facie to rate cotton and cloth, when the difference in

[50] *Indian Tariff Board Report on the Heavy Chemical Industry*, p. 100.
[51] Ibid., p. 101.

price was appreciable, when subtle distinctions as to what was raw material and what was not did not exist, was anomalous and required justification. Further, when practically the maximum rate was charged on the raw material there should have been some distinction between long and short distance traffic, though none was made.[52]

The glass bangles case in 1928 afforded an even more striking instance of the restrictive influence of the present rates system. That industry supplied the needs of a very large number of people in Hyderabad and Southern India, served by the M.&S.M., N.(G.)S., and S.I. Railways. It was also found that the retention of the hold on these markets was indispensable for maintaining the industry, which was situated at Firozabad. The distances over which the traffic moved were considerable: Firozabad to Wadi, 1,056 miles; to Balharshah, 716 miles before the Nizam's Railway is reached; and Firozabad to Raichur, 1,123 miles, and via Waltair, 1,204 miles before the M.&S.M. takes up the traffic. The rates on through traffic over such long distances should not in the last stages be even higher than before. The Railway Rates Advisory Committee therefore argued that 'it is but fair that the Firozabad exporter should, after his goods have been carried such long distances, be entitled to ask for a considerable reduction in the rates during the last stages of the traffic's journey before it reaches its destination.... The quotation in conjunction with other railways of a rate lower than the local rates in the case of long distance through traffic cannot embarrass the railways as regards the local traffic.'[53]

These instances show that the rates structure and practice prima facie discouraged inter-railway movements of traffic. It was only when railway administrations found that in order to obtain as large a revenue as possible, they must, as with jute, cotton, grains, etc., facilitate movement of traffic to other places or protect their own traffic from diversion, that

[52] R.R.A.C. Case IV, 1929, *Report*.

[53] R.R.A.C. Case XVIII, *Messrs. Bhannilal Glass Works v. The B.B. &C.I., N.G.S., N.W., M.&S.M., E.I., B.N., S.S.L., S.I.,* and *G.I.P. Railways, Report,* p. 3.

lower rates on telescopic scales were granted, to enable movement over longer distances. The pressure of demand from organized groups of producers had often compelled railway administrations to concede special telescopic rates. But in a country which is still one of small-scale producers, not efficiently organized, the facilities enjoyed by the larger enterprises may not be available to them, and the result is that the present rates structure and practice may, even without conscious intent, exert a restrictive influence over the movement of traffic. Again a new industry struggling to establish itself may find that the transportation charges applied may be the maximum leviable and that they may impose too great a burden on its capacity. The railways themselves, it should not be forgotten, react only to the economic conditions present, and unless they know where exactly the railway rate pinches, they have no information to go upon. Thus, when it was pointed out that the rates on certain chemicals from Ambernath to the interior was higher than from Bombay to the same places, though the distance in the latter case was greater by 45 miles, the Agent of the G.I.P. Railway replied that he would have equalized the freights if his attention had been drawn to this earlier.[54] But it has also to be recognized that the characteristics of the present system with its individualistic bias are such as to throw too large a burden on the shoulders of the trader. If the trader is so fortunate—considering the trouble one might almost say, unfortunate—as to have the market for his commodity distributed all over India, the problem of marketing depends largely on his successful negotiation with each individual railway concerned. The glass bangles industry illustrated this aspect forcefully and has shown the shortcomings of the present system as it affects inter-railway through traffic.

Port rates

We may now proceed to examine the charge of special port rates favouring foreign trade and discriminating against

[54] *Indian Tariff Board Report on the Heavy Chemical Industry*, p. 91.

internal trade. Though the allegation that it has been deliberately kept up has been repeatedly repudiated, it has somehow persisted. A recent reference to it is found in the Report of the Public Accounts Committee for 1933-4 in which they desired the Railway Board to examine if there was any basis for 'the allegation generally made that the rates of freight at present charged operate in such a way as to help the export of raw materials and the import of foreign manufactured goods to the detriment of Indian industries.'[55]

As the Acworth Committee pointed out, the practice of lower scales of rates on exports and imports exists all the world over, and railways are compelled to adopt them on account of the stress of competition in international trade. The complexity of conditions here, created by the sea freights and the competition of routes and producers, necessitate adjustments of rates to enable local producers to meet them successfully. But as regards import rates one has to consider whether they are likely to bring about competition to the detriment of the domestic industry.

Port rates may be the result of one of two conditions: the competition of alternative sea or other routes compelling railways to protect their own traffic by specially depressing their rates to the level of the competing routes; or the deliberate adoption of lower scales of rates from the ports to facilitate movement of exports and imports. It is possible to confuse the one for the other. Thus goods from Bombay to Calcutta have always the option of moving by sea or by rail. If the railways want to retain their traffic and prevent it being lost to the alternative cheaper steamer route, their own charge for the cost of transport will have to be the same as that of the competitor. The rivers of Bengal have always influenced the rates of the Eastern Bengal and Assam Bengal Railways. Coastal shipping and the opening of new ports such as Vizagapatam and the Kathiawar ports exert a pressure in the same direction. Special rates have to be quoted to meet the different conditions presented by them.

[55] *Public Accounts Committee Report* 1934-5, Vol. I, Part II, Railways, p. 50.

While the need for special rates will be readily conceded in such cases, the fact that the existence of such rates is likely to affect other rates is not so readily recognized. Thus cotton, classified in the 4th class, at 0·62 pie per maund per mile, moving from Navsari to Howrah, a distance of 1,168 miles, should normally be charged Rs. 3-13-8 per maund. Similarly cotton from Broach to Howrah, a distance of 1,191 miles, should also be charged at class rates and this would amount to Rs. 3-14-10. At these rates, however, the traffic would not move. The cotton merchant at both these points knows that the traffic from Bombay to Howrah bears a lower rate. He also knows that he could send the goods by sea. Even if the latter alternative was not available, he could send his goods to Bombay and re-booking it from thence to Howrah would cost him much less than sending his goods direct. In order to prevent such unnecessary movement of goods the railways concerned, therefore, had to quote a special rate of Rs. 2-1-9 from Navsari and Rs. 2-4-7 from Broach, rates at which the traffic moved and re-booking or diversion was prevented. Taking now the rates for cotton to Cawnpore which is 337 miles less than Navsari–Howrah and 430 miles less than Broach–Howrah, it was found that they were higher. The rates to Cawnpore were Re. 0-6-5 higher from Navsari and Re. 0-0-9 higher from Broach. Similarly piecegoods from Bombay to Howrah, a distance of 1,221 miles, were rated Re. 1-1-0 per maund, while consignments from Bombay to Nagpur, a distance of only 518 miles, were charged Rs. 2-2-11 per maund. If the normal class rates were charged on piecegoods sent from Bombay, the entire traffic would be carried by sea, and the railways might have logic on their side, but they would lose revenue. It is easy to argue from instances of this kind that rates are specially lowered to favour the ports and kept high to the disadvantage of Indian industries. It is not realized that such differentiated rates are frequently the consequence, not the cause: they are more often the result of competitive conditions which the railways, whether they like or not, are compelled to meet in their own interest. One

can, therefore, quote Ripley with justice : 'It is often alleged that traffic managers do not *make* rates at all, their energies are bent to the analysis of those circumstances by which rates are made for them.'

These specially lowered rates have to be distinguished from those quoted to assist traders in getting their commodities placed in world markets in competition with other producing centres. Specially lowered rates are given, for example, for the export of manganese ore from the Central Provinces to the ports of Bombay, Calcutta and Vizagapatam and on chrome ore from Baluchistan to Karachi, etc. The special rebate of 25 per cent of the railway freight on the North Western Railway for wheat carried to Karachi for export to ports west of Aden is another instance of the same kind.

Turning now to the class of cases where rates have operated against the interest of Indian industries, it is found that there have certainly been instances of the kind during recent years. In connexion with the enquiry into the rates on cotton, the Railway Rates Advisory Committee stated :

'It seems also desirable, if possible, to obviate the criticism that the Indian system of rate-making is such as to enable the foreign manufacturer, no doubt enjoying the advantage of a cheap sea route, but nevertheless thousands of miles away, to import cotton from India to his shores cheaper than the Indian millowner in Howrah. The total freight to Japan from Lyallpur works out to be Rs. 2-14-1 as against Rs. 3-11-1, the current rate to Howrah via Saharanpur. The position is nearly the same with regard to many European countries using Indian cotton.'[56]

In the case of transport of chemicals from Ambernath to other places, the Agent of the G.I.P. Railway was prepared to equalize the rates with those from Bombay. But equalization, argued the Indian Tariff Board,

'does not . . . meet the objection in principle that the indigenous industry is deprived of its geographical advantage and the foreign industry is given to that extent a preference over the indigenous industry. We do not deny that such inequalities of rates may admit of justification, if considered purely

[56] R.R.A.C. Case IV, *Kesoram Cotton Mills & Four Others* v. *The N.W. and E.I. Railways, Report*, p. 7.

from the point of view of railway economics, but in certain directions it is essential that considerations of railway finance should be subordinated to the interests of the country as a whole.'[57]

To observe how the differential port rates operated, consider the Sholapur Mills case which came up for investigation in 1929. The Sholapur Cotton Mills found that the railway freight rates on yarn and piecegoods booked from Sholapur to Delhi and Amritsar were heavier relatively to the distance than the freight rates from Bombay and Madras. The distances from these places to Delhi and Sholapur and the rates charged were as follows :

From stations	To Delhi				To Amritsar			
	Miles	Rs.	as.	p.	Miles	Rs.	as.	p.
Sholapur	1,058	4	0	7	1,336	4	5	1
Bombay via G.I.P.	957	2	10	3	1,235	3	8	2
Madras via B.B.&C.I.	1,569	4	0	0	1,847	4	4	8

As compared with the rates from Madras the Sholapur rates were higher although the distances from Madras stood about 50 per cent more. But the alternative sea route from Madras to Karachi and thence to the Punjab, being cheaper, compelled a reduction of the through rates to the level of the sea freights. It was also found that the reductions were no greater than were needed for the purpose. Here the lower rates from the port of Madras could not be helped, as otherwise the entire traffic would have gone by sea. The Bombay rates to Delhi and Amritsar were very much cheaper, although the distance was only 100 miles less. Bombay, enjoying the position of a producing centre and the largest importing port for piece-goods and yarn, could, with the comparatively lower level of rates, easily undersell Sholapur goods in Upper India markets. As the incidence of freight was on the traders, it was to their interest to import their supplies from Bombay instead of from Sholapur. It was, therefore, a matter of legitimate grievance for the Sholapur industry that it should find, despite its favourable geographical position, that its products could be under-

[57] *Indian Tariff Board Report on the Heavy Chemical Industry*, 1929, p. 91.

sold by goods of Bombay and foreign origin. The case clearly illustrated the manner in which cheaper sea freights influenced railway rates and centres of production in the interior were discriminated against, thus rendering it possible even for imported foreign goods to compete successfully against them on the mere ground of cheaper rates from the ports. On this reasoning, relief was afforded to the Sholapur mills, restoring the relativity of rates which allowed for their geographical situation.[58]

It is not necessary to labour this point. Similar cases may exist, but in view of poorer organisation, the industries and trades affected may not have succeeded in making their difficulties effectively heard and removed. The fact that large-scale industries have only been of recent growth and that imported manufactured goods still bulk large must have its influence on the rates structure. The Railway Board's examination of the question a few years ago did not 'indicate that any of these rates operate to the detriment of Indian industries. On the contrary, a very large number of special rates have been quoted for Indian industries on a basis appreciably lower than those applicable from the ports, *e.g.*, for sugar from the sugar producing areas, iron and steel from Tatanagar, etc.'[59]

EFFECT OF INDUSTRIALISATION ON RAILWAY RATES

With the rapid expansion of industrial and manufacturing activity in the country, railways are facing rates problems of a fundamentally different character. Domestic production is gradually replacing imports of many classes of commodities and this is proved by the statistics of the volume of imports and domestic manufacture during the last twenty years, which disclose a pronounced decrease under the former and an equally pronounced increase under the latter. Imports of iron and steel, cloth, yarn, sugar, matches, soap, cement, cigarettes

[58] R.R.A.C. Cases XIV & XVI. *Messrs. Lachhmi Sahai and Company others the Cloth Merchants of Delhi* v. *The Great Indian Peninsula Railway, Report.*
[59] *Public Accounts Committee Report,* 1934-5, Vol. I, Part II. p. 54.

and tobacco—to mention a few items—record a substantial decline, while manufacture under these heads in India has advanced considerably. The economic transition to the present stage of home production has caught the railways also. Tariff schedules based on long leads of traffic in connexion with raw materials moving to the ports at low rates and manufactured goods bearing relatively higher freight charges from the ports have to be readjusted to what appears to be an opposite situation. The establishment of a new industry affects the flow of exports by domestic utilisation of raw material and the imports by the substitution of the home product. Long leads are being displaced by short leads.

This change has not affected the tonnage handled. In fact, there has been an increase on account of the transport of many kinds of raw materials required by industries. Thus, at a large paper mill, against an outward traffic of 13,000 tons of paper, there has been an inward traffic in the principal raw materials amounting to 76,000 tons distributed as follows:

Grass, bamboo etc.	27.000 tons
China clay and lime	5,000 ,,
Chemicals	4,000 ,,
Coal	40,000 ,,

But the larger tonnage arising from this traffic does not, from the point of view of the railways, produce anything like a proportionate increase in earnings.[60]

There are also some instances where new industries have eliminated railway traffic dependent on imports. The demand for piece-goods in the United Provinces, which had formerly given rise to a long lead traffic in imported goods from Calcutta, has been met by mills in Cawnpore, Delhi, Ahmedabad and other centres on the G.I.P. and B.B.&C.I. Railways. To the extent that these mills have displaced imported piece-goods in the province, the long lead traffic is lost to the East Indian Railway. The loss in revenue in this instance was, however, balanced by the increased traffic in raw cotton, but taking the two together the East Indian carried 11,000 tons

[60] 'Some Aspects of Industrial Development in India in relation to Railways' by C. A. Crawford, *Railway Accounts & Finance*, Vol. VI, p. 81.

more for the same gross revenue.[61] There have also been instances where railways have benefited themselves substantially from new industries, such as the B.N. and the E.I. from the expansion of the iron and steel industry during the last quarter century.

The attempt on the part of industries to reduce unnecessary competition and transport costs by regionalising production and marketing is also operating in the same direction. As shown by the cement merger and the sugar syndicate, the tendency is likely to be more towards the products of a factory being sold in markets adjacent to it. Such market zones exercise a restrictive influence on the traffic flowing from, or to, areas outside such zones and thus cause shorter leads, and these developments naturally react on both the traffic and revenues of railways.

The direct financial advantages from industrial development may not appear to be as great as the transportation involved in the shorter leads and increased tonnage would seem to justify. But there are many indirect gains to the railways to be taken into account. The development of a locality where a new industry is established always creates new traffic by increasing the population and their purchasing power, and through the growth of other industries and subsidiary trades. Traffic in machinery, building materials, raw materials for industry, consumers' goods, etc., is bound to go up. Dehri-on-Sone, for instance, which had a traffic in cloth amounting to 240,000 lbs accounted for close on 1·5 million lbs in five years; during the same period passenger traffic increased from 74,000 to 132,000, and revenue from Rs. 75,000 to Rs. 110,000. All these results were attributable to the establishment of a large sugar mill, a cement factory, and a paper mill.[62]

Conclusion

We may now summarize the conclusions to be drawn from the discussion of the present system of railway rates attempted

[61] *Railway Accounts & Finance*, Vol. VI, p. 81.
[62] Ibid.

in this chapter. From 1922 onwards changes were introduced from time to time in the rates structure to bring it into greater conformity with the economic needs of the country. While the defects in regard to classification and complaints of unreasonableness and undue preference as to individual rates sought to be remedied by the revised 1936 classification and through the investigations of the Railway Rates Advisory Committee, other defects inherent in the present system have been left altogether untouched. Thus, the maximum-minimum feature of the classification, entirely unsuited to present-day requirements and permitting too wide a discretion to the railways in fixing rates, still continues. The basis of the risk rates, arbitrary in character and anomalous in practice, calls for justification of their retention. The unduly individualistic attitude of railway administrations which had given rise to numerous schedules and complexity of rates, still stands in the way of uniformity of practice and the grant of continuous milage rates. The principle underlying the imposition of terminal charges is in urgent need of clarification. The combined effect of all these defects has been to produce in the minds of the trading community a feeling of helplessness. These shortcomings undoubtedly clog the wheels of the rail transport machine. Even more important from the long range point of view is the adoption of a rates policy harmonising with the present economic needs of the country. That it has been out of tune with the demands of the growing industries has been abundantly proved by the views expressed by authoritative committees.

The maladjustment of the rate level and the price level called for correction in the thirties. To the extent that prices have moved up under the stimulus of the war economy, the burden of railway rates might have been decreased. Whatever relief the continuance of a higher level of prices after the war may yield to traders, they are not likely to resolve the difficulties referred to above. A revision of the entire system and a rationalisation of the procedure are imperative if Indian railways are to serve the interests of trade and industry of

the country satisfactorily. The fact that our economic organization is still in process of development suggests the need for a greater degree of flexibility and responsiveness on the part of the rates system than might appear to be the case in Great Britain or the United States.

The drift seems to be in the direction of a demand for an adjustment of the rate level. The uneven character of the decline in the price level in the thirties resulted in considerable differences in the cost of transportation to different industries. The case for a revision of railway rates was strong, but it was resisted on the ground that a reduction in rates would have had an adverse effect on railway revenues. If railways are to carry on their work of transportation efficiently, their financial condition should be sound. In the last resort the fare and freight rate levels ought to be such as to yield the railways a gross income sufficient to cover their working expenses and other fixed charges. The rate level is, therefore, conditioned by the levels of working expenditure. The steady increase in the cost of railway working has already been referred to.[63] We shall now proceed to a more detailed study of the principal factors which contributed to it.

[63] Chapter III *supra*.

CHAPTER VII

RAILWAY EXPENDITURE: OPERATING EXPENSES

WHILE discussing the financial status of Indian railways, it was stated that working expenditure had increased considerably after the last war. This, as we have already seen, was one of the principal reasons why Indian railways were unable to balance their budgets during the depression. On the cost of operation depends the entire basis of the pricing of rail transport. The upward trend of railway expenditure and its inelasticity during recent years were referred to in the previous chapters. We may now proceed to examine in greater detail the subject of railway expenditure with a view to ascertaining the character and direction of the increase during the post-separation period. As a study of railway expenditure pre-supposes a knowledge of the structure of railway accounts, we may refer briefly to the present accounting classification.

Working expenditure is broadly divided into eight different heads. These heads, called 'Abstracts', are :

- A Maintenance of structural works
- B Maintenance and supply of locomotive power
- C Maintenance of carriage and wagon stock
- D Maintenance and working of ferry steamers and harbours
- E Expenses of the traffic department
- F Expenses of the general departments
- G Miscellaneous expenses
- H Expenses of the electrical department.[1]

Each of these abstracts is further divided into four divisions, though all of these do not find a place in each abstract. These sub-divisions, called 'Minor heads', are :

- I General administration
- II Ordinary repairs and maintenance
- III Operation
- IV Renewals and replacements, or depreciation.

This classification forms the essential framework of railway accounts on the State-owned railways.

The statistics of railway expenditure by abstracts as at present compiled refer to the Class I railways and slightly enlarge the scope of the railways dealt with. The accounts of the worked lines are also included in the statistics of the Class I railways, but this does not affect the main conclusions as they form only a small part of the total. In interpreting the statistics of the period, attention must be paid to the changes made from time to time in the methods of railway accounting. Some of these changes were not material, as they related only to less important details. There were, however, others which affected the constituent elements of certain minor heads and even abstracts. Such, for instance, was the decision in 1930 to adjust 'hire charges and other railway payments', amounting on the whole to a credit figure, in reduction of expenditure instead of taking them, as pre-

[1] Prior to the revised classification adopted in 1934-5, electrical expenditure used to be presented under Abstract Ca.

viously, as miscellaneous earnings.[2] Another instance is the case of 'house rent to staff', which was formerly debited to Abstract G, and with effect from 1931-2 distributed among the individual abstracts. Rent recovered from staff quarters built in connexion with large open line works was classified as earnings instead of being credited to capital.[3] Similarly, charges on account of wages of drivers, cost of fuel and other expenses in connexion with rail motors have been classified under Abstract C instead of Abstract B. Much more serious has been the effect of the change in the accounting of the credits from released materials from works. Prior to 1932-3 these credits, whether resulting from repairs or renewals and replacements, were taken in reduction of working expenses, but since that year only credits in connexion with repairs and maintenance operations were taken as such and the balance was included in the net receipts. From 1936-7 onwards, these credits are taken in reduction of expenditure met from the depreciation fund. The extent to which the comparability of figures has been vitiated will be clear from the fact that for proper comparison with the earlier years a sum of Rs. 119 lakhs should be deducted from the working expenses in each of the years 1932-4, Rs. 90 lakhs in 1934-5, and Rs. 110 lakhs in 1935-6.

[2] *Railway Audit Report* (*on the Appropriation Accounts of Railways*) 1929-30, p. 14. The Director of Railway Audit commenting on these orders observed : 'These orders, having been issued after the railway demands had been granted on the understanding that the old classification would remain in force, had the effect of putting additional sums at the disposal of spending authorities beyond the amounts which, it must be assumed, the Assembly considered as appropriate.'

[3] *Financial Commissioner's Review*, 1931-2, p. 53.

Other instances of the same type vitiating the comparability of the accounts under similar heads may be mentioned. Miscellaneous receipts of the publicity departments of the different railways previously taken in reduction of expenditure were with effect from 1933-4 accounted for as 'Sundry earnings'. Again, recoveries from company-managed railways on account of Government supervision, audit and control, previously taken in reduction of expenditure under '12. Miscellaneous railway expenditure' are booked since 1934-5 under 'XII. Miscellaneous railway receipts'. The cost of renewals of complete units of work, which do not involve any betterment, is with effect from the same year being booked under 'Renewal and replacement' in the case of the company-worked railways instead of under 'Repairs and maintenance'. Half monthly payments under the Workmen's Compensation Act during the absence on leave of an employee temporarily disabled in the performance of his duties are now being debited to Abstract G, Miscellaneous expenses, instead of the head to which the pay was debited. Charges for inspection of stores levied by the Indian Stores Department were, prior to 1934-5, separately debited to working expenses under Abstract G; they are now being included in the cost of stores. For other instances see the *Railway Audit Reports on the Appropriation Accounts* for each year, *Financial Commissioner's Reviews*, 1930-5, and *Chief Commissioner's Reviews* for 1935-6 and later years.

The total working expenditure of the Class I railways for the period 1924-37 will be found in Table 65. Before proceeding to the departmental abstracts, their relative importance may be indicated. Taking the year 1924-5, Abstract A, Maintenance of structural works, showed a total expenditure of Rs. 14·37 crores, out of a total working expenditure of Rs. 67·04 crores for all Class I railways, or 21 per cent of the total. The cost of Abstract B, Maintenance and supply of locomotive power, amounted to Rs. 23·32 crores, or 35 per cent, the highest of all the abstracts. Expenditure under the other abstracts was as follows: Abstract C, Maintenance of carriage and wagon stock, Rs. 9·69 crores, or 14 per cent; Abstract E, Expenses of the traffic department, Rs. 11·75 crores or 18 per cent; Abstract F, Expenses of the general departments, Rs. 4·65 crores, or 7 per cent; and Abstract G, Miscellaneous expenses, Rs. 2·74 crores, or 4 per cent. Abstract Ca, Electric service department, and Abstract D, Maintenance and working of ferry steamers and harbours, are comparatively small items.

TABLE 65. WORKING EXPENDITURE BY ABSTRACTS*

(CLASS I RAILWAYS)

(In lakhs of Rs.)

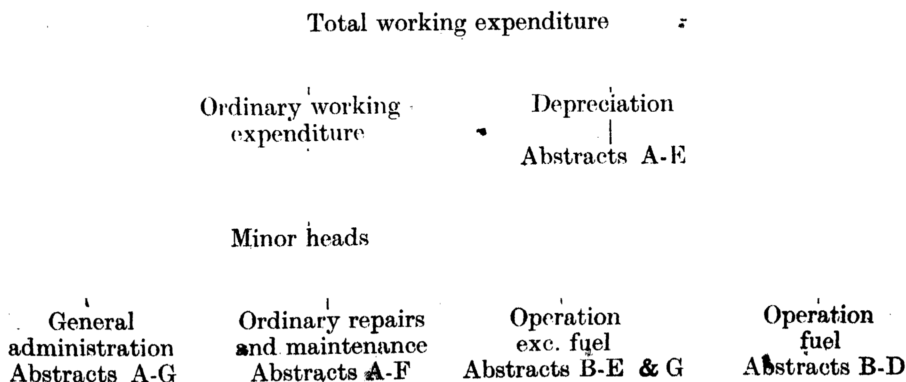
Year	Abs. A	Abs. B	Abs. C	Abs. Ca	Abs. D	Abs. E	Abs. F	Abs. G	Depr'n.	Tota
1923-4	13,52	23,44	8,54	..	34	10,55	4,93	4,98	..	66,37
1924-5	14,37	23,32	9,69	..	42	11,75	4,65	2,74	..	67,04
1925-6	14,32	23,23	9,83	9	45	11,57	4,95	4,21	..	68,73
1926-7	14,16	21,86	9,85	21	44	11,39	5,06	4,23	..	67,28
1927-8	16,00	21,98	9,90	60	45	11,56	5,03	4,25	..	69,84
1928-9	16,24	22,14	9,57	83	45	12,03	5,12	4,73	..	71,18
1929-30	17,21	23,19	9,83	1,30	61	11,90	5,34	4,36	..	73,82
1930-1	15,95	22,35	9,60	1,35	46	12,16	5,50	4,57	..	72,00
1931-2	14,36	19,59	8,49	1,37	40	11,05	5,21	4,63	..	65,14
1932-3	14,86	18,63	8,19	1,35	40	10,59	4,88	4,71	..	63,67
1933-4	15,32	18,52	8,37	1,40	40	10,77	4,98	4,55	..	64,31
1934-5	16,00	18,72	9,07	1,41	40	10,84	4,98	4,51	..	65,94
1935-6	9,29	17,26	6,45	1,18	35	11,09	5,07	4,50	11,19	66,37
1936-7	8,52	17,32	6,00	1,16	34	11,25	5,05	4,44	13,38	67,47

* *Railway Board's Reports*, Vol. II.

No great changes are to be noticed in the relative importance of the abstracts during the next six years. In 1929-30, expenditure under Abstract B was still the largest item and amounted to 31 per cent. The cost of structural works increased by 2 per cent of the total. There were also slight increases under Abstracts C, Ca, F and G. The position remained

generally the same in 1934-5, except for minor variations in some of the abstracts.[4]

The expenditure under each abstract can only denote whether there was an increase or decrease. It is impossible to say from a review of these figures, for instance, whether the decrease during the depression was due to real economy, or merely to a reduction caused by postponement of non-essential expenditure. The total under each abstract tells us little as to whether cost has gone up or down under general administration, ordinary repairs and maintenance, operation, fuel or depreciation unless one pursues the detailed statistics of these heads under each abstract. It is thus difficult to ascertain the direction and extent of the increase or decrease in the cost of operation without a closer examination. For purposes of the present survey, it seems best to take railway expenditure under the different abstracts as grouped under the minor heads, and thus cut across the departmental classification. This does not, of course, prevent a reference to the distribution of the total expenditure under each minor head into the different abstracts concerned. The present grouping will be understood from the following chart.



Of the four minor heads, the first three, namely, general administration, ordinary repairs and maintenance, and opera-

[4] The statistics for subsequent years are not comparable because of the decision to show depreciation separately instead of including it, as previously, in the totals of each abstract.

tion, will be considered in this chapter. The expenditure on account of depreciation, the last minor head, is dealt with in the succeeding chapter.

GENERAL ADMINISTRATION

The cost of general administration covers a substantial portion of the total working expenses of the Indian State-owned railways. General administration is taken in a broad sense, and includes: establishment charges of the central and divisional headquarters offices; expenditure incurred for direction and personnel; cost of the Agent's and/or General Manager's office; cost of various general departments such as the accounts, cash and pay, medical, and watch and ward departments; rates and taxes; law charges; passages to England; leave salary paid in England; compensation; cost of railway training schools; staff welfare services; expenditure of the Director of Wagon Interchange and of the Indian Railway Conference Association; cost of London boards (of the company-managed railways); share of the Secretary of State's general charges, etc. Apart from the expenditure booked under Abstracts F and G, a certain amount is also entered under each of the remaining abstracts.

The total cost of general administration in 1924-5 amounted to Rs. 12·33 crores, or 20 per cent of the total, and 24 per cent of the ordinary, working expenditure. The trend of administrative expenditure during succeeding years is, as shown in Table 66, one of pronounced increase. Thus, as compared with that in 1924-5, the cost of general administration in 1929-30 stood at Rs. 14·40 crores, or 17 per cent higher, and in 1930-1 at Rs. 14·89 crores, or 21 per cent higher, representing the top-most level reached during the period 1924-36. As the salary cut imposed in 1931-2 upset a fair comparison, it may be ignored in order to ascertain the extent of permanent economy secured through the measures adopted during 1931-6. The percentages of administrative expenditure thus considered decreased from 121 to 119 in 1932-3. During the next three years there was a slight recession to 115. These figures indicate

that the cost of general administration remained at a higher level throughout the period of the depression.

TABLE 66. COST OF GENERAL ADMINISTRATION ON INDIAN STATE-OWNED RAILWAYS*

(COMMERCIAL & STRATEGIC)

(*Rs. in crores*)

Year	Rs.	% of 1924-5	Year	Rs.	% of 1924-5
1924-5	12·33	100	1930-1	14·89	121
1925-6	12·77	104	1931-2	14·66	119
1926-7	13·06	106	1932-3	14·46	117
1927-8	13·44	109	1933-4	14·33	116
1928-9	14·19	115	1934-5	14·24	115
1929-30	14·40	117	1935-6	14·22	115

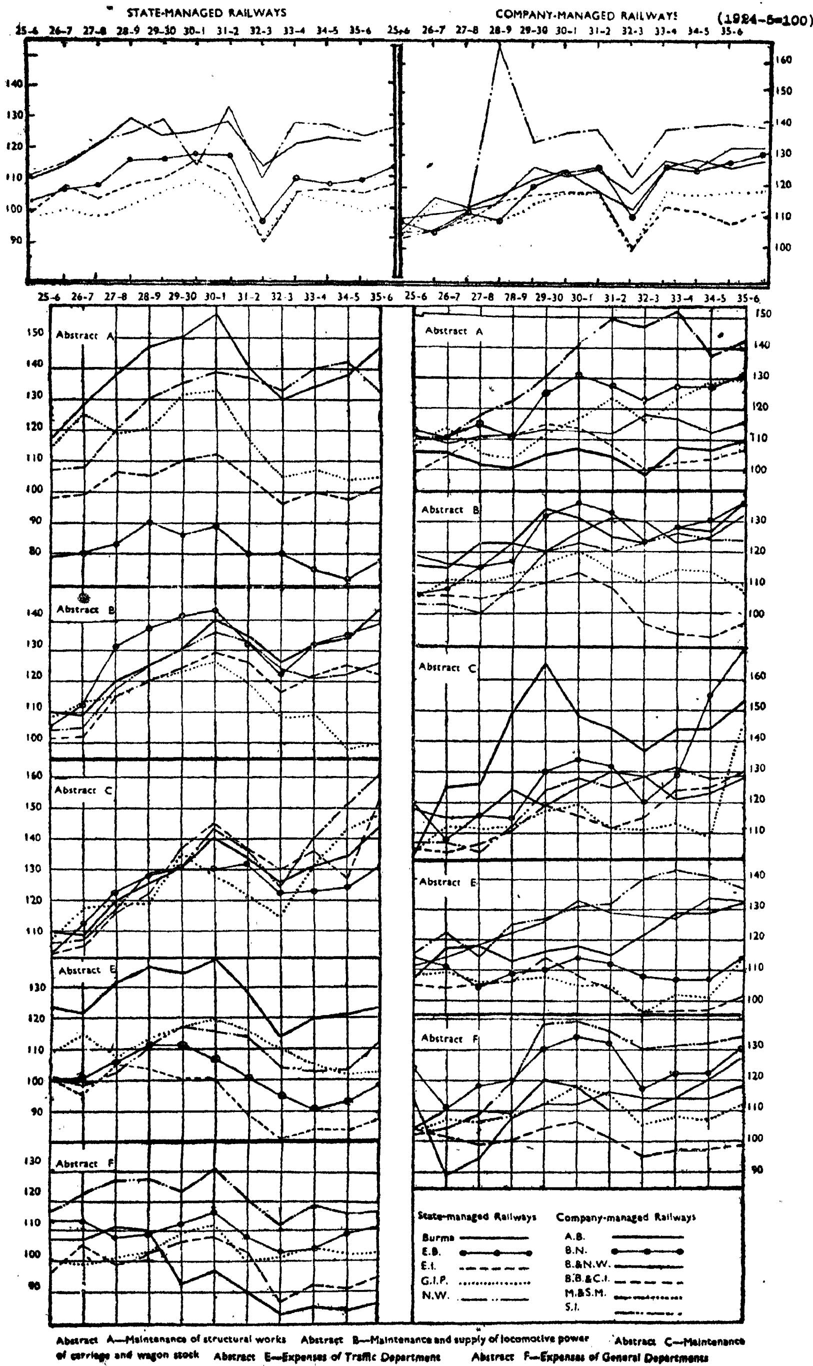
* The figures for 1924-32 are taken from the *Explanatory Memorandum to Railway Budget*. The figures for 1932-5 are taken from the *Financial Commissioner's Reviews* and allow for the accounting changes to include the same items as in the earlier figures. The corresponding figures after allowing for the salary cuts and according to the accounting system in force are : 1932-3 Rs. 12·59 crores ; and 1933-4 Rs. 12·43 crores. The total for 1935-6 is compiled from the final accounts.

The trends of expenditure on general administration on the different railways, shown in Figure V, indicate a general increase on most of the railway systems. There was a steady rise in the cost of administration till 1931-2. During 1932-3, a reduction—due partly to the transfer of provident fund contributions to another minor head—was seen on all railways, but from the next year onwards, the earlier levels were not only regained, but even exceeded in a few instances.

The state-managed railways presented on the whole a better picture. The G.I.P. remained near about the basic level, and the E.I. had an increase of 15 per cent by 1931-2, after which it tended to be lower. Administrative expenditure on the remaining lines stood 10 to 30 per cent higher than in 1924-5. The company-managed railways disclosed similar trends but larger increases. The B.B.&C.I. and M.&S.M. had the most satisfactory records, the other systems showing increases ranging from 30 to 40 per cent, and, since 1934, touching higher levels than in 1929-30 itself.

The trends of expenditure on general administration on the principal State-owned railways under the different abstracts during 1924-36 are also shown in Figure V. The

FIGURE V. COST OF GENERAL ADMINISTRATION 1924-36, (STATE-OWNED RAILWAYS)



Abstract A—Maintenance of structural works Abstract B—Maintenance and supply of locomotive power Abstract C—Maintenance of carriage and wagon stock Abstract E—Expenses of Traffic Department Abstract F—Expenses of General Departments

expenditure incurred under the different abstracts is not uniform and that booked under Abstracts F and G accounted for 60 per cent of the total. Administrative expenditure on the five state-managed and five company-managed railways was distributed for the year 1924-5 as follows :

Abstract	Rs. in lakhs	% of total	Abstract	Rs. in lakhs	% of total
A	1,89	16	E	1,21	10
B	1,19	10	F	3,80	32
C	48	4	G	3,26	28

There was a substantial increase in administrative expenditure under all the abstracts. The rise in expenditure started generally during 1925-7 on state-managed railways and a year or two later, 1927-9, on company-managed railways, the peak being reached in 1930-1. As shown by the total figures, the decrease lasted till 1932-3, after which cost again increased. The record of the company-managed lines under Abstracts A, B, C, E and F [5] provides a striking contrast to that of the state-managed lines. While the cost of administration in the depression period tended to remain lower than that in 1929-30 on the latter, the trend was markedly different on the former. In a good many instances the cost was raised to levels higher than in 1929-30, even at the end of six years of economy and retrenchment. The administrative expenditure under Abstract C provided an extreme case of this increase for both the groups. The record of individual railways for the pre-depression and depression periods may be seen from the six-year averages summarized in Table 67.

It is interesting to summarize the position revealed by the trend of administrative expenditure on the five state-managed

[5] Abstract A represents the salaries of the chief engineers, deputy chief engineers, assistant engineers, subordinate supervisory staff and office staff. Abstract B includes the salaries of the locomotive, deputy locomotive, district locomotive, and assistant locomotive superintendents, works managers, subordinate supervisory staff such as the foreman, inspectors, etc., and the office staff. The administrative expenditure under Abstract C is similar to that under Abstract B. Under Abstract E are included the salaries of traffic managers, deputies, assistants, subordinate supervisory staff and office staff. Abstract F shows the expenses of all general departments, such as the Agent's Office, accounts and audit, stores, cash and pay, London boards of Company-managed railways, etc. Abstract G presents miscellaneous expenses, such as law charges, rents of buildings, and land, etc., rates and taxes, contribution to provident institutions, gratuities, compensation, educational grants, health and welfare services, publicity expenses, fire protection of railway property, etc.

TABLE 67. SIX-YEAR AVERAGES OF ADMINISTRATIVE EXPENDITURE UNDER ABSTRACTS A-G ON STATE-MANAGED AND COMPANY-MANAGED RAILWAYS*

(*Rs. in thousands*)

1924-5=100

State-managed					*Company-managed*				
Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %	Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %
					Abstract A				
Burma	9,11	130	141	+11	A.B.	5,56	103	106	+ 3
E.B.	18,83	86	79	− 7	B.N.	18,47	113	128	+15
E.I.	35,07	103	102	− 1	B.B.&C.I.	20,71	106	106	..
G.I.P.	25,81	118	111	− 7	B.&N.W.†	5,27	109	115	+ 6
N.W.	31,12	117	137	+20	M.&S.M.	13,94	107	123	+16
					S.I.	10,73	115	145	+30
					Abstract B				
Burma	6,14	116	135	+19	A.B.	2,39	119	128	+ 9
E.B.	7,61	121	134	+13	B.N.	11,59	113	131	+18
E.I.	25,41	110	123	+13	B.B.&C.I.	16,21	106	100	− 6
G.I.P.	16,24	113	110	− 3	B.&N.W.	2,48	116	128	+12
N.W.	17,16	114	127	+13	M.&S.M.	9,74	109	113	+ 4
					S.I.	6,74	106	123	+17
					Abstract C				
Burma	2,37	116	135	+19	A.B.	84	128	145	+17
E.B.	4,06	116	127	+11	B.N.	3,96	115	140	+25
E.I.	8,88	114	138	+24	B.B.&C.I.	6,71	108	120	+12
G.I.P.	6,70	116	131	+15	B.&N.W.	93	115	126	+11
N.W.	8,03	115	143	+28	M.&S.M.	3,61	109	118	+ 9
					S.I.	2,61	109	128	+19
					Abstract E				
Burma	5,22	125	125	..	A.B.	2,71	112	124	+12
E.B.	11,42	105	98	− 7	B.N.	12,24	108	110	+ 2
E.I.	29,48	101	88	−13	B.B.&C.I.	13,11	106	101	− 5
G.I.P.	16,08	111	109	− 2	B.&N.W.	3,81	115	131	+16
N.W.	19,17	105	109	+ 4	M.&S.M.	6,80	106	104	− 2
					S.I.	4,42	117	137	+20
					Abstract F				
Burma	18,97	105	88	−17	A.B.	9,60	109	114	+ 5
E.B.	27,81	109	109	..	B.N.	32,84	117	126	+ 9
E.I.	69,70	102	96	− 6	B.B.&C.I.	53,81	101	99	− 2
G.I.P.	49,89	102	104	+ 2	B.&N.W.	11,57	103	117	+14
N.W.	66,39	119	119	..	M.&S.M.	30,19	106	111	+ 5
					S.I.	20,51	112	134	+22
					Abstract G				
Burma	12,26	123	126	+ 3	A.B.	4,78	131	138	+ 7
E.B.	22,94	123	118	− 5	B.N.	27,54	118	126	+ 8
E.I.	67,38	105	103	− 2	B.B.&C.I.	38,50	109	103	− 6
G.I.P.	67,90	83	72	−11	B.&N.W.	5,78	96	112	+16
N.W.	46,68	119	116	− 3	M.&S.M.	22,82	108	101	− 7
					S.I.	15,45	142	120	−22

* Source : *Railway Board's Reports*, Vol. II, 1924-36.

† The figures of the B.&N.W. are included only for purposes of comparison with a company, as distinguished from the company-managed, railway.

and five company-managed railways. The group average percentages for the different abstracts stated below indicate that a substantial increase in expenditure persisted on the state-managed lines during 1930-6 under Abstracts A, B and C, while a decrease is shown under Abstracts E, F and G. The company-managed lines record an increase in expenditure under all the abstracts excepting G. Effectiveness of financial control on the state-managed lines is again confirmed by these figures. The average for the company-managed lines would have been still higher but for the inclusion of the B.B.&C.I.'s figures which, as may be seen from Table 67, were lower under almost all the abstracts excepting C.

TABLE 68. EXPENDITURE ON GENERAL ADMINISTRATION ON STATE-MANAGED AND COMPANY-MANAGED RAILWAYS

(1924-5 = 100)

	State-managed railways			Company-managed railways		
Abstracts	1924-30 Average	1930-6 Average	Inc. or dec.	1924-30 Average	1930-6 Average	Inc. or dec.
A	110·8	114·0	+ 3·2	108·8	121·6	+12·8
B	114·8	125·8	+11·0	110·6	119·0	+ 8·4
C	115·4	134·8	+19·4	113·8	130·2	+16·4
E	109·4	105·8	− 3·6	109·8	115·2	+ 5·4
F	107·4	103·2	− 4·2	109·0	116·8	+ 7·8
G	110·6	107·0	− 3·6	121·6	117·6	− 4·0

A statistical analysis has its limitations, and the character of the increase in administrative expenditure may be illustrated by a reference to certain changes in organization introduced during the pre-depression period.

DIVISIONAL SYSTEM

One of the early changes in organization was the introduction of the divisional system in place of the departmental system. Following the British practice, Indian railways adopted from the beginning the departmental form of organization. The departmental system encourages loyalties on the basis of departmental chiefs but, in the case of the larger railways, it is considered to be inferior to the divisional system, which seeks to sub-divide responsibility on a territorial

basis.[6] On smaller railways the departmental system worked efficiently enough. But some systems traversed areas almost as large as Great Britain, and proposals were put forward to reduce the size of the administrative units of the larger railways by divisions. The divisional organization was first introduced in 1922 on the G.I.P., but only as a half-way measure. While the operating organization was divisionalized, the engineering and commercial departments were left untouched. That position continues on that railway even today. On 1 October 1924, the N.W. effected a comprehensive reorganization on the divisional principle. When the E.I. passed under state management and amalgamated with the O.&R. in 1925, a program of divisionalization was carried out on lines similar to that adopted on the N.W., embracing all spheres of open line operation, traffic, commercial, civil engineering, etc.

Several advantages were expected from the divisional system. They were, briefly, the elimination of water-tight compartments which resulted under the departmental system; a reduction in the number of outlying units of the administration and in the number of inter-departmental references and correspondence; better distribution of work and responsibility; decentralization of the executive work of the railways in all its details, including staff organization, control being retained at headquarters in regard to matters of policy only; better adaptation of the administrative organization

[6] 'Amongst the advantages of such a [divisional] system are the prevention of a local interdepartmental dispute reaching very far up the organization, although this is only in part avoided because the divisional officer has not often sufficient engineering qualifications to permit him to undertake the engineering responsibility for his division; it does, however, prevent friction between the operating and commercial departments. Undivided responsibility assists considerably efficient operating, and blame for inefficiency cannot be passed backward and forward between various departments. The divisional system tends also to give officers a better all-round training, although it often necessitates a technical assistant reporting to a non-technical chief. One of its greatest advantages is the greater choice it gives of officers skilled to undertake the position of General Manager, men in each case who are conversant with the problems of many departments. It is popularly supposed that the divisional organization is a more expensive one in the number of higher salaried officers than the departmental .... The greater efficiency obtained and the effect of decentralization upon personal touch with traders' organizations and public opinion generally in the case of railways traversing large areas of territory, probably offset this greater expense by inducing additional traffic, and, consequently, revenue. In these days of strong competition by road carriers whose strength lies in their power to keep in touch with local opinion, such decentralization as is obtained by a divisional organization probably just tips the scales in favour of this form of organization.'—C. E. R. Sherrington, *Economics of Rail Transport in Great Britain*, Vol. II, 1937, p. 19.

to adjust the provision of transport facilities on a regional basis; and the release of the principal officers at headquarters from matters of detail and routine work to more constructive activities and important matters. To attain these ends the N.W. Railway[7] was divided into seven divisions; the E.I. into six; and the G.I.P.[8] into six. These changes were confined only to the state-managed railways. Of the remaining state-managed lines, the E.B., continued to function on the departmental system, but the headquarters office was reorganized on the model of the N.W. Railway.

Against the advantages claimed for the divisional system by its advocates must be set the criticisms about the additional expenditure involved and the illusory character of the gains expected. The Railway Retrenchment Sub-Committee examining the problem stated that 'the advocates of the divisional system are inclined to claim too much for it.' While such a claim could neither be disproved nor actually proved, they felt strongly that the 'divisional organization has not always resulted in the decrease in direct costs that might have been expected of it.' With a senior experienced officer acting as a sort of semi-Agent and taking full responsibility for his division, there should have been a corresponding reduction in the headquarters organization. That this was not realized is clear from the sub-committee's reference to the North-Western Railway on which they found 'considerable scope for reduction at headquarters if the present divisional organization should remain and be a success.'[9]

The hybrid system on the G.I.P. has little to commend it, and the Retrenchment Sub-Committee found in it 'a grave risk of friction with consequent loss of efficiency.' The duplication of work and staff that it produced could only be eliminated by a reversion to the departmental system or a complete divisionalization. That the divisional system encouraged an increase in the number of officers is clear. But this might be

[7] Before the last war the creation of two systems out of the N.W. was tentatively considered.
[8] On this railway six transportation divisions were created.
[9] *Railway Retrenchment Sub-Committee Report*, para 102-3, pp. 34-5.

balanced by other advantages, particularly those resulting from a more intimate contact with local public opinion, a factor, specially important at a time when competition from road transport had become very keen. The Wedgwood Committee, considering the criticisms, did not suggest any alternative to the divisional system on the railways concerned. Whatever the gains possible and expected, some senior railway officers have expressed doubts as to whether the advantages claimed were worth the cost.[10]

COST OF ACCOUNTING AND AUDITING

An instance of changes, gradually introduced, resulting ultimately in a considerable increase of expenditure is afforded by the railway accounting and audit departments. Originally, the duties of accounting and auditing were carried on by a single organization under the Auditor-General. On the company-managed railways there was an 'Accounts and Audit' staff under the company and in addition a small test-check on behalf of Government by staff working under the Auditor-General. The Acworth Railway Committee, referring to the defects of this system, drew pointed attention to the importance of railways making themselves responsible for the preparation of their accounts and to the desirability of keeping the functions of accounting and auditing separate.[11]

The Railway Board separated accounts from audit as an experimental measure on the E.I. Railway in 1925, and reported the success of the experiment to the Legislative Assembly, which, in a resolution in the same year, recommended the separation of the accounting organization from the audit on the remaining

[10] Mr. D. R. Lamb quotes the instance of the South African Railways on which the change from the departmental to the divisional system secured instead of an increase a reduction from 196 to 127 officers despite the great increase in milage and traffic.—*Modern Railway Operation*, p. 6.

[11] The committee stated : 'Economical railway management cannot be ensured without a proper system of railway accounting. Apart from a mere audit check of receipts and disbursements, a railway requires a large number of financial returns of various kinds ; not in order to say whether expenditure incurred has been duly authorized, or receipts duly accounted for, but to say whether expenditure is being wisely incurred, whether retrenchment of habitual expenditure is possible under one head, whether new expenditure under another is proving profitable, or even whether a larger expenditure would be likely to be fruitful.'—*Acworth Committee Report*, para 129, p. 44.

state-managed railways. Control over the accounts staff was vested in the Financial Commissioner, Railways, not the Railway Board, and the Auditor-General was, in future, to be responsible for audit alone. The accounts staff under the new system were to perform the same duties of accounting as were done by the combined audit and accounts staff under the Auditor-General before.

The advantages claimed for the independent accounts organization were :

(*a*) the earlier preparation of accounts and returns required by the executive and administrative officers for the control of expenditure ;
(*b*) the prevention of irregular expenditure held under objection ;
(*c*) the introduction of methods of procedure more in accordance with commercial practice, which should lead to greater attention by all concerned to the internal economy of the railways ; and
(*d*) the creation of an audit organization independent of the administration.

Sir Arthur Lowes Dickinson, who enquired into the railway accounting systems and procedure, recommended the extension of the principle of separation of accounts from audit to the other state-managed railways. By 1928 the experiment on the E.I. Railway was considered to have justified all expectations, and with the concurrence of the Standing Finance Committee, Railways, and the Auditor-General, the separation of accounts from audit was accepted as a permanent policy. The system was accordingly introduced on the Burma Railways on 1 January 1929 ; the N.W. Railway on 1 April 1929 ; the G.I.P. on 1 October 1929 ; and the E.B. on 1 April 1930. The old system under which the chief auditor was also the chief accountant of the railway gave place to two officers, a chief accounts officer and a chief auditor on each railway, controlling respectively the accounts and audit departments. The coordination of these departments at the top was done by the Controller of Railway Accounts under the Financial Commissioner, Railways, and the Director of Railway Audit under the Auditor-General. Simultaneously with these developments on the state-managed railways was pursued the policy of strengthening the Government audit of the company-managed railways.

The effect of these developments was to increase the total expenditure under accounts and audit. Most of the changes were introduced as a permanent policy only in 1929. The consequent increase in expenditure may, as shown in Table 69, be ascertained by comparing the cost of railway accounting and auditing in 1924-5 and 1929-30. The total cost of the accounting and auditing on the State-owned railways amounted to Rs. 103·14 lakhs in 1924-5. The expenditure increased to Rs. 138·65 lakhs, or by 34 per cent, in 1929-30. The cost increased still further in 1930-1 and the expenditure amounted to Rs. 147 lakhs, or 43 per cent higher than the basic figure. It is no wonder, therefore, that the Railway Retrenchment Sub-Committee found the growth of expenditure on accounts and audit taken together 'staggering whether taken by itself, or in comparison with the growth of milage, or the receipts and expenditure accounted for and audited by this establishment, or of other railway expenditure which is most analogous to it, namely, charges included under the head "General administration".'[12]

TABLE 69. EXPENDITURE ON RAILWAY ACCOUNTING AND AUDITING

(*Rs. in thousands*)

	1924-5	1929-30	Increase	% of
	Rs.	Rs.	Rs.	1924-5
Headquarters office[13]	2,23	4,97	2,74	223
State-managed railways :				
(*a*) Accounts	59,00	76,89	17,89	130
(*b*) Audit	1,59	8,38	6,79	527
Total	60,59	85,27	24,68	141
Company-managed railways :				
(*a*) Accounts	38,53	45,49	6,96	118
(*b*) Audit	1,79	2,92	1,13	163
Total	40,32	48,41	8,09	120
Total :				
(*a*) Accounts	97,53	124,96	27,43	128
(*b*) Audit	5,61	13,69	8,08	244
Total	103,14	138,65	35,51	134

[12] *Railway Retrenchment Sub-Committee Report*, p. 18. The sub-committee stated in their report that 'the Financial Commissioner himself agreed that too much was being spent on accounts and audit combined and that there was definite room for economy.'—Ibid., p. 19.

[13] Under the term 'Headquarters office' are included the cost of the establishment of the Accountant-General, Railways, prior to 1928, and the cost of the establishments of the Controller of Railway Accounts and the Director of Railway Audit after that date.

That the combined system was more economical in direct costs is indisputable. This is proved by the fact that the separation had on all railways resulted in increased direct costs. Proposals for separation were advocated on grounds of savings which were ultimately expected to amount to Rs. 1,97,000 per annum after meeting the cost of audit and of 'several lakhs of rupees in other than establishment charges.' These hopes proved illusory and the immediate results were merely duplication of staff and work. Granting all the theoretical and practical advantages of the new system, they were not, as the sub-committee stated, worth the price paid, and Indian railways could not afford to have the separation unless considerable economies were effected.[14]

There are two facts to be observed about the expenditure on accounts and audit, given in Table 69. Firstly, the rate of increase in the cost of accounting and auditing on the state-managed railways is very much more than that on the company-managed railways. The increase during the seven years ended 31 March 1931, on the former was Rs. 23 lakhs, or 39 per cent; on the latter it was Rs. $8\frac{1}{2}$ lakhs, or 22 per cent. Secondly, the high proportion of the cost of audit to the cost of accounts on the state-managed railways is to be noted. It was about 16 per cent in 1930-1 for these lines as compared with about 10 per cent for the company-managed railways. The proportion of the cost of audit to that of accounting in other government departments was very much less, and in the case of army expenditure it worked out at about 4 per cent.[15]

The trends of expenditure on accounts and audit during the depression reflected, despite the recommendations of the Retrenchment Sub-Committee and the economy measures

[14] *Cf.* 'We must recognize that the cost of audit, excluding the cost on company-managed railways, is at present Rs. 15 lakhs and that practically the whole of it can be saved by amalgamation. We are definitely of opinion that we cannot in the present financial circumstances contemplate the continuance of the present system if we have to pay this price. Unless, therefore, considerable economies can be effected in the existing organization of audit and accounts combined, we feel it our duty to say that, whatever the theoretical advantages of the present system, it is not one that Indian railways can afford at present.'—*Railway Retrenchment Sub-Committee Report*, para 65, p. 21.

[15] Ibid., para 55, p. 18.

pursued, a further increase. The increase in the cost of audit was even more pronounced.[16]

The findings of the Wedgwood Committee throw more light on the effect given to the sub-committee's recommendations six years earlier. The Wedgwood Committee found that the reductions in the accounts departments were somewhat obscured by the fact that they had taken over a good deal of the statistical work from Agents as well as certain accountancy work which was previously done departmentally. If allowance was made for this additional work, the real reduction would amount to something like 10 per cent in the number of the accounts staff of the state-managed railways, including the office of the Controller of Railway Accounts at Delhi. Even after taking this factor into consideration, the accounts departments of the State-owned railways, according to the committee, were 'unduly expensive'. The accounts expenditure amounted to 1·47 per cent of the gross receipts on the state-managed railways and to 1·20 per cent on the company-managed railways. The corresponding figures for the two largest British railway companies amounted to only 0·95 per cent. These figures, the committee concluded, 'disclose a case for a careful scrutiny of expenditure on the accounts departments of the Indian railways.'[17]

The cost of the audit and accounts departments since 1936-7 does not indicate any improvement. The expenditure on State-owned railways (excluding the Burma Railways separated in 1937-8) as shown in Table 70 denotes an increase of 52 per cent as compared with 1924-5 and 13 per cent as compared with 1929-30.

[16] This is clear from the expenditure on railway accounting and auditing during 1929-35. The details are as follows :

EXPENDITURE ON RAILWAY ACCOUNTING AND AUDITING*

(*In lakhs of Rs.*)

	Audit	Accounts and audit	C.R.A.	Total
1929-30	13·70	1,19·86	2·58	1,36·14
1930-1	17·87	1,26·38	2·81	1,47·06
1931-2	19·66	1,27·64	2·93	1,50·23
1932-3	19·20	1,26,32	2·88	1,48·40
1933-4	17·76	1,28·33	2·58	1,48·67
1934-5	17·77	1,30·26	3·13	1,51·16

* Extracted from the Budget papers. The figures from 1931-2 onwards do not include salary cut.

[17] *Wedgwood Committee Report*, para 67, p. 36.

TABLE 70. EXPENDITURE ON AUDIT AND ACCOUNTS ON STATE-OWNED RAILWAYS*

(EXCLUDING THE BURMA RAILWAYS)

(In lakhs of Rs.)

Year	Audit	Accounts and Audit†	C.R.A.	Total
1924-5	5·61	94·10	..	99·71
1929-30	13·70	117·92	2·58	134·20
1935-6	17·05	129·57	2·62	149·24
1936-7	16·39	130·89	2·73	150·01
1937-8	16·67	134·57	2·74	153·98
1938-9	17·27	132·25	2·66	152·18
1939-40	16·86	133·30	2·06	152·22

* Compiled from the Railway Budget papers. The salary cuts are not included.
† Includes audit conducted by the staff of company-managed railways. The corresponding expenditure of state-managed railways is included under the previous head.

It should be clear from this survey that, in spite of retrenchment in expenditure and other measures of economy, the cost of general administration could not be reduced materially from the higher levels to which it had risen during the pre-depression years. The administrative expenditure of many departments, stood high during 1929-30, as compared with 1924-5. The percentages stated in Table 71 indicate that even after six years of depression and an intensive pursuit of economy the increase persisted. The expenditure incurred on many departments in 1929-30, as compared with 1924-5, represented a large increase under most of the heads. Discussing the cost of general administration, during 1924-30, the Railway Retrenchment Sub-Committee found the increase 'very much higher than the growth in other main heads of working expenses', namely 21 per cent. There was a decrease of Rs. 45 lakhs under repairs and maintenance and an increase of only 7 per cent under operation (excluding fuel).[18] Even the increase in the milage did not warrant so great a rise in cost.

[18] The expenditure on operation takes into account the 'the fact that the working expenses of 1924-5 secured a benefit to the extent of (*a*) Rs. 141 lakhs, on account of the decision that railway companies were not liable to pay customs duty on stores imported for a State railway as a result of which past payments were refunded, and (*b*) Rs. 38 lakhs, on account of payment from the railway reserve fund of the cost of writing down certain stores to their market value.'—*Railway Retrenchment Sub-Committee Report*, para 94, p. 32.

The additional milage was 3,100 or 11 per cent.[19] But, as the sub-committee pointed out, one 'should ordinarily have expected that additions to milage would not increase the costs of administration to the same extent, but administration charges have been increasing at a more rapid rate.'[20]

TABLE 71. EXPENDITURE ON GENERAL ADMINISTRATION BY DEPARTMENTS, STATE-OWNED RAILWAYS*

(*Rs. in lakhs*)

	1924-5 Rs.	1929-30 Rs.	% of 1924-5	1935-6 Rs.	% of 1924-5
Agency	36·63	54·46	149	46·79	128
Audit and accounts	97·53	122·38	125	133·84	137
Cash and pay	12·47	14·19	114	14·22	114
Stores department	48·02	62·20	130	59.40	124
Engineering department	196·30	233·83	119	223·33	114
Locomotive department	122·35	152·46	125	146·57	120
Carriage & wagon department	48·72	63·19	130	72.00	148
Traffic department	125·69	140·65	112	132·11	105
Medical department	36·82	45·31	123	51·52	140
Steam boat service	4·09	4·32	106	4·22	103
Telegraph department	64·95	64·80	100	49·46	76
Police	46·62	55·36	119	52·84	113
Electric service department	..	7·86	..	9·41	..
London board establishment	16·15	9·79	61	9·04	56
Government supervision	16·53	11·31	68	11·67	71
Provident fund contribution	155·15	181·11	117	196·58	127
Gratuities	82·38	70·44	86	86·10	105
Publicity expenses	..	16·39	..	10·21	..
Other expenses	122·30	128·08	105	..	..

* Railway Budget papers.

We may compare the cost of general administration with the operation charges (excluding fuel), which fluctuate with the milage worked, and reflect the effects of the fall of prices of consumable stores. The total cost of operating staff, including running staff, office staff and other staff, had gone up by about Rs. 1·75 crores, or about 16 per cent. As compared with this, the increase in the cost of administration was greater. Among the items in which the increase of expenditure by 1929-30 was most pronounced were Agency, recording an increase of 49 per

[19] *Cf.* 'Though the total State-owned milage in 1930-1 exceeds that in 1924-5 by 4,200 miles, over 1,100 miles of this were due to the purchase of the Delhi Umballa Kalka and Southern Punjab Railways, which were formerly worked by State railways.'—*Railway Retrenchment Sub-Committee Report*, paras 94-5, pp.32-3.

[20] Ibid.

cent; stores 30 per cent; engineering department 19 per cent; locomotive department 25 per cent; and carriage and wagon department 30 per cent. The increase in expenditure on the last department had little to do with the reorganization consequent on the State Railway Workshop Committee's recommendations. The sub-committee concluded their review by stating that administrative expenditure was 'far too high' and desired 'most emphatically to impress upon the Railway Board the absolute necessity of reducing these charges.'[21]

Although these criticisms were made as early as 1931, the position had not improved even by 1935-6. As may be seen from the figures in Table 71, the cost of certain departments had gone up rather than down. The percentages of the expenditure on audit and accounts, carriage and wagon, and medical departments, for instance, recorded a further increase. The cost of the remaining departments, with a few exceptions, stood, in spite of a decrease, materially higher than their basic levels. Administrative expenditure was thus on a comparatively higher level throughout. This has to be reckoned as one of the most important among the contributory factors which caused, during the depression, a serious deterioration in the financial results of Indian railways.

II. ORDINARY REPAIRS AND MAINTENANCE EXPENDITURE

We may now turn to the second minor head of railway expenditure, 'Ordinary repairs and maintenance'. Under this head is included the cost of all ordinary repairs and maintenance of way and works, rolling-stock, machinery, plant and equipment, etc. The annual expenditure under this item for all State-owned railways during 1924-36 may be seen from Table 72. The total expenditure on ordinary repairs and maintenance in 1924-5 amounted to Rs. 18·10 crores, and except for a reduction in the next year, it was fairly stable around that figure. In 1929-30, there was an increase of 2 per cent to Rs. 18·43 crores.

[21] *Railway Retrenchment Sub-Committee Report*, para 98, p. 33.

The principal feature during the depression was a considerable reduction in the total cost of repairs and maintenance, which amounted to 22 per cent in 1931-2 itself. During the next four years there was an increase in this expenditure, which stood in 1935-6 at 88 per cent of the basic figure. It should be borne in mind, however, that in comparing the cost of repairs and maintenance, allowance must be made for the increase in milage and other extensions and additions to railway property and equipment.

TABLE 72. EXPENDITURE ON ORDINARY REPAIRS AND MAINTENANCE, STATE-OWNED RAILWAYS*

(*Rs. in crores*)

(1924-5 = 100)

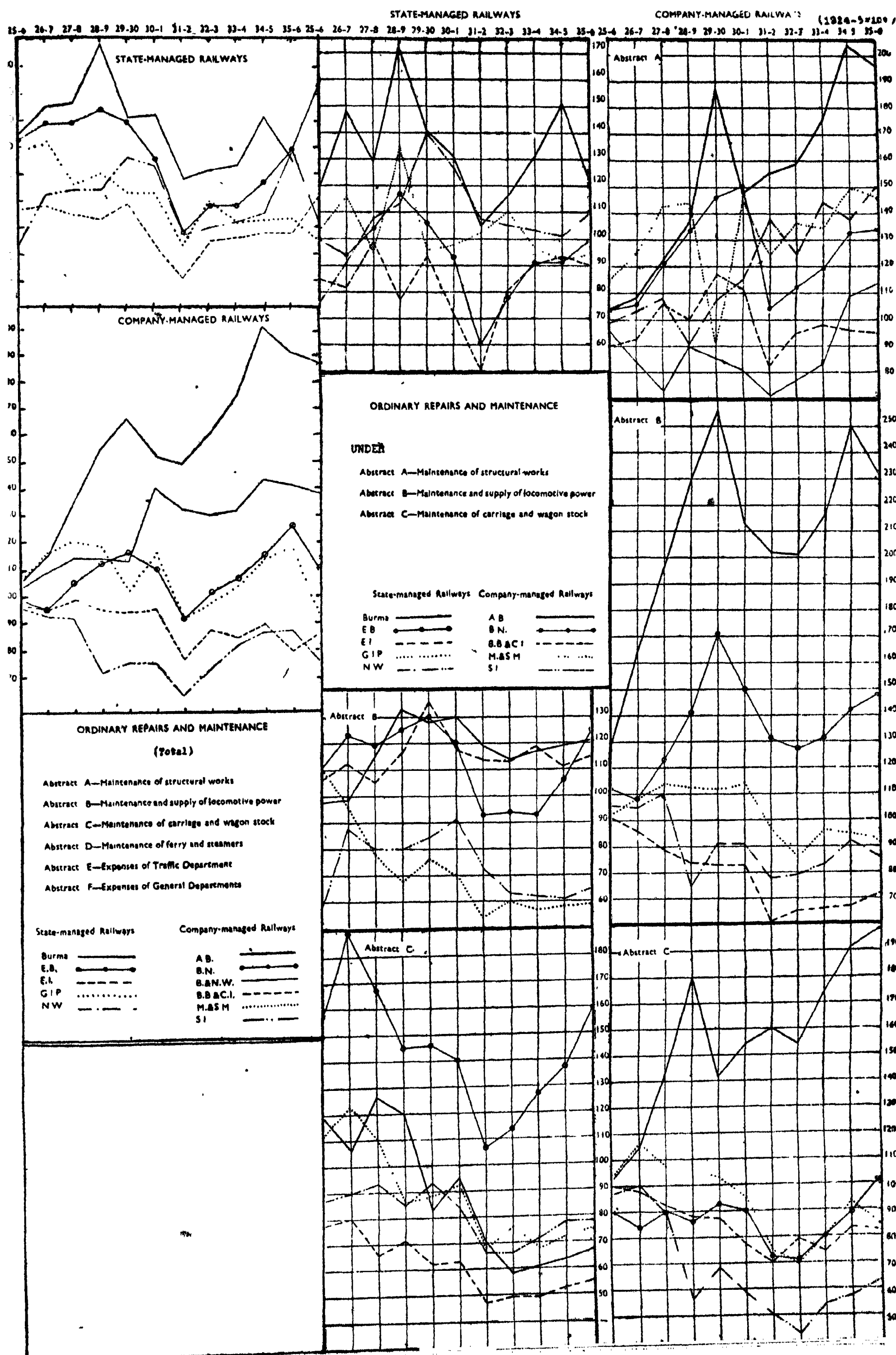
Year	Rs.	%	Year	Rs.	%
1924-5	18·10	100	1930-1	17·57	97
1925-6	17·18	95	1931-2	14·11	78
1926-7	18·16	100	1932-3	14·69	81
1927-8	18·05	100	1933-4	14·99	83
1928-9	18·11	100	1934-5	15·94	88
1929-30	18·43	102	1935-6	15·88	88

* The figures for the period 1924-29 are taken from the accounts figures in the budget papers. Those for 1929-35 are taken from the *Financial Commissioner's Reviews* of each year, and have been recast to allow for the deduction of credits from released materials on the same basis as during previous years. The figure for 1935-6 has been arrived at by deducting from Rs. 16·98 crores credits amounting to Rs. 1·10 crores.

Expenditure on ordinary repairs and maintenance on the principal State-owned railways since 1924-5, as shown in Figure VI, indicates a decrease during the pre-depression period itself on four state-managed and two company-managed railways. The effect of the economy measures and retrenchments adopted at the commencement of the depression is seen in the abrupt decrease in the expenditure of all railways systems during 1931-2. But from 1932-3 onwards there was a steady increase on four company-managed railways. The A.B. recorded a phenomenal rise, while the B.N., B.&N.W. and M.&S.M. had lower but substantial rates of increase. The state-managed lines on the whole remained below the basic levels. The growth of expenditure on the E.B. since 1935 seems to be rather exceptional.

There are four abstracts under which the expenditure on ordinary repairs and maintenance forms an important minor

FIGURE VII. COST OF ORDINARY REPAIRS AND MAINTENANCE 1924-36, (STATE-OWNED RAILWAYS)



head, namely, Abstracts A, B, and C. The percentage variations for each railway under these abstracts are shown in Figure VII.

There were wide fluctuations in the expenditure on ordinary repairs and maintenance under Abstract A[22] not only between railway administrations but on the same railway from year to year. Among the state-managed railways the percentage for the Burma touched the peak of 171 in 1928-9, while among the company-managed lines the A.B. had the highest level from 1929-30 onwards, a sudden decrease in 1930-1 being followed by a steady increase to 204 per cent. The S.I., M.&S.M. and B.N. disclosed a tendency towards a higher level from 1930-1 onwards. Only on the B.&N.W. and B.B.&C.I. was the cost of ordinary repairs and maintenance below the basic levels. The six-year averages for 1930-6 reflect a continued general increase on the N.W., and three company-managed lines, the A.B., M.&S.M. and S.I.

Another feature referred to earlier is also exhibited by this abstract: that there was among the state-managed railways a uniform reduction in expenditure. Four out of the five lines showed large decreases and only the N.W. had on an average a higher percentage during 1930-6. All the company-managed railways, except the B.B.&C.I., recorded, as shown by the percentages, a much higher level of expenditure in 1935-6 as compared with 1929-30. The state-managed systems, on the other hand, kept their expenses substantially below even the 1924-5 levels, and the N.W. itself effected a reduction of over 30 per cent on its own figures of 1929-30.

[22] The minor head under Abstract A, 'Ordinary repairs and maintenance' is divided as under :

(1) Structural works : (*a*) track (running lines, sidings and yards) ; (*b*) bridges and tunnels ; (*c*) service buildings ; (*d*) residential quarters ; (*e*) station machinery (signals, turn-tables, water columns) ; (*f*) shore connexions at ferries ; (*g*) miscellaneous (fencing, service roads, etc.).
(2) Equipment : (*a*) engineer's tools and plant ; (*b*) service motor cars and trollies ; (*c*) furniture.
(3) Conservancy of rivers.
(4) Plantations, nurseries and gardens.
(5) New minor works.
(6) Miscellaneous expenses : (*a*) carriage of revenue stores ; (*b*) losses of cash and stores ; (*c*) other items.

The increase in the cost of repairs and maintenance under Abstract B[23] affected only certain systems on which the peak was reached during 1929-30. On the others, namely, the B.B.&C.I., S.I., G.I.P. and N.W., there was a decrease during 1924-30 itself. The percentage variations on company-managed lines were greater, and the large increases on the A.B. and B.N. deserve mention. The variations on state-managed lines were more restricted. The six-year averages indicate larger expenditure on the A.B., B.N., Burma and E.I., and decreases ranging from 11 to 28 per cent on the others during the depression.

TABLE 73. SIX-YEAR AVERAGES OF EXPENDITURE ON ORDINARY REPAIRS AND MAINTENANCE, UNDER ABSTRACTS A, B & C ON STATE-MANAGED AND COMPANY-MANAGED RAILWAYS*

(*Rs. in lakhs*)

1924-5=100

	State-managed					*Company-managed*			
Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %	Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %
				Abstract A					
Burma	30·95	135	126	−9	A.B.	11·83	127	173	46
E.B.	57·78	104	85	−19	B.N.	51·78	118	125	7
E.I.	110·90	90	79	−11	B.B.&C.I.	57·14	101	96	−5
G.I.P.	82·72	108	99	−9	M.&S.M.	32·94	120	139	19
N.W.	116·55	105	109	4	S.I.	22·69	101	135	34
				Abstract B					
Burma	11·68	112	120	8	A.B.	3·37	179	219	40
E.B.	25·61	118	105	−13	B.N.	39·89	126	138	12
E.I.	76·41	113	115	2	B.B.&C.I.	74·05	92	69	−23
G.I.P.	87·76	88	60	−28	M.&S.M.	44·30	108	97	−11
N.W.	121·46	82	69	−13	S.I.	28·46	98	85	−13
				Abstract C					
Burma	19·93	109	69	−40	A.B.	4·42	130	172	42
E.B.	21·18	151	131	−20	B.N.	68·52	90	84	−6
E.I.	174·92	76	52	−24	B.B.&C.I.	63·98	94	78	−16
G.I.P.	76·81	103	75	−28	M.&S.M.	34·09	106	83	−23
N.W.	97·42	91	74	−17	S.I.	24·09	85	54	−31

* Percentages calculated on figures taken from the *Railway Board's Report*, Vol. II.

Abstract C[24] was characterized by a general decrease in the cost of repairs and maintenance. But two railways, the

[23] The repairs and maintenance expenditure under this abstract is grouped as follows :
(1) Locomotives : (*a*) running repairs ; (*b*) workshop repairs.
(2) Rail motors : (*a*) running repairs ; (*b*) workshop repairs.
(3) Equipment : (*a*) machinery and tools ; (*b*) service motor cars and trollies ; (*c*) furniture.

[24] 'Ordinary repairs and maintenance' under Abstract C is classified into five heads : (*a*) coaching vehicles ; (*b*) goods vehicles ; (*c*) running repairs to foreign railway vehicles ; (*d*) equipment ; and (*e*) new minor works. Here also repairs are classified into 'running' and 'workshop'. Equipment includes the same heads as under the previous footnote.

A.B., and E.B., recorded an increase to very high levels. The six-year averages reflect substantial reductions on all railways, with the sole exception of the A.B. which stood 42 per cent higher.[25]

We may now proceed to summarize the main trends of expenditure under ordinary repairs and maintenance. The expenditure under this head may be conveniently grouped under three broad heads, namely, (*a*) way and works, including the cost of maintenance of all structural works, (*b*) rolling-stock, and (*c*) machinery, tools and plant.

The expenditure on the maintenance of way and works[26] for all State-owned railways amounted to Rs. 5·56 crores in 1924-5. The cost of this item during succeeding years varied as shown below.

TABLE 74. NET EXPENDITURE ON WAY AND WORKS*

(State-owned Railways)

Year	% of 1924-5	Year	% of 1924-5
1925-6	93	1931-2	83
1926-7	101	1932-3	113
1927-8	112	1933-4	116
1928-9	121	1934-5	121
1929-30	115	1935-6	119
1930-1	108		

* Figures for the percentages are taken from Railway Budget papers. Owing to accounting changes the figures of 1932-6 are not strictly comparable with those of previous years.

There was a definite increase in the cost of repairs and maintenance of way and works which amounted to 21 per cent in 1928-9 and 15 per cent in 1929-30. The real decrease took place in 1931-2 when a reduction of 17 per cent was effected and the cost brought down to 83 per cent of 1924-5. But expenditure returned to levels higher than those of previous years. Some increase on account of additional track milage was inevitable, but the increase in expenditure was substantially

[25] The expenditure on repairs and maintenance under Abstract F relates to telegraph and other equipment, and as the amount involved is small, representing only a fraction of the ordinary working expenses, it is not examined here.

[26] Approximately consisting of the same items of expenditure as those stated in footnote 23.

more than was justified on this account. The track of the ten State-owned lines was 9·70 per cent higher in 1929-30, and 12·47 per cent in 1935-6.[27] The percentages of expenditure on way and works indicate a much higher level, except during 1931-2. Track, it should be remembered, is only one, though admittedly the most important, of many items of structural works. The increase is rather surprising in view of the general decrease of expenditure on ordinary repairs and maintenance during the depression period. The attempt to overtake arrears of maintenance may have inflated the figures of 1934-6, and this certainly does not affect the figures of previous years.

The second head, rolling-stock, includes the cost of repairs and maintenance of locomotives (steam and electric), traction equipment, electric multiple unit stock (excluding traction equipment), rail motors, coaching vehicles, and goods vehicles. The percentage variations in the cost against each of these classes of rolling-stock during the period[28] were as follows :

TABLE 75. NET EXPENDITURE ON ROLLING-STOCK*

(STATE-OWNED RAILWAYS)

(1924-25 = 100)

	1925-6	1926-7	1927-8	1928-9	1929-30	1930-1	1931-2	1932-3	1933-4	1934-5	1935-6
Locomotives	94	100	95	99	105	107	89	86	86	88	91
Coaching vehicles	98	105	104	93	96	91	78	77	78	83	85
Goods vehicles	101	95	78	81	78	82	63	62	63	69	74
Net rolling-stock	94	98	92	90	93	88	73	80	78	83	84

*Percentages calculated on figures taken from the Railway Budget papers for 1926-38.

The expenditure on rolling-stock was generally on the decrease during the period. By 1928-9, the cost of repairs and maintenance under this head had dropped by 10 per cent. After a slight increase in the following year, there was a further

[27] The track milage of five state-managed and five company-managed railways compared during the period as follows :

	1924-5	1929-30	Increase
State-managed railways	25,965	28,276	2,311
Company-managed railways	15,954	17,708	1,754
Total ..	41,919	45,984	4,065

[28] The expenditure on rail motors, included under locomotives prior to 1932-3, was stated separately thereafter, and therefore for strict comparison allowance must be made for this.

decrease, the percentage touching 73 in 1931-2. From this level there is seen a rise in the percentage to 84 in 1935-6. The cost of repairs and maintenance of locomotives stood on a uniformly higher level as compared with that of coaching and wagon stock. The largest decrease occurred under wagons.

The third item under repairs and maintenance is 'Machinery, tools and plant, and miscellaneous', embracing a large number of miscellaneous transactions, such as the cost of the equipment utilised in connexion with the maintenance of structural works, locomotives, carriages and wagons, electric power, steam boats and ferry services, traffic department, and telegraphs. 'Miscellaneous' refers to the expenditure in connexion with such transactions as carriage of revenue stores, losses of cash and stores, and other items not classified elsewhere. Owing to a change in accounting, statistics of expenditure under this head are available only up to 1931-2. Net expenditure under 'Machinery, tools and plant, and miscellaneous' during 1924-32 increased by 5 to 13 per cent, except for two years which recorded a decrease.

PERCENTAGE VARIATIONS OF EXPENDITURE ON MACHINERY, TOOLS AND PLANT, AND MISCELLANEOUS*

(STATE-OWNED RAILWAYS)

(1924-25 = 100)

	1925-6	1926-7	1927-8	1928-9	1929-30	1930-1	1931-2
Net expenditure on machinery, tools & plant, and misc.	105	111	107	98	111	113	86

* Percentages calculated on figures taken from Railway Budget papers.

During the depression the cost of repairs and maintenance came under drastic retrenchment. The extent to which expenditure was curtailed is clearly indicated in the accounts of every railway administration. The trend of traffic receipts during 1930-1 foreshadowed the severity of the depression and the railways took prompt action in cutting down their costs. Economy was attempted in the repairs and maintenance of track, buildings, residential quarters, station machinery

and rolling-stock. Every railway, to quote the Commissioners of the Railway Board, carefully considered

> 'the scales of consumable stores, tools and plant with a view to reduction. Cheaper substitutes have been experimented with. Scrap material has been reclaimed and reconditioned and brought into use. The strength of the permanent way gangs and level crossing gate-men has been carefully examined and reduced wherever possible. Repairs to staff quarters, buildings and bridges have been drastically curtailed. Only essential minor works have been undertaken. Rolling-stock has been laid up when not required. The period between overhauls has been increased. Overtime has been reduced in workshops and sheds. Short time has been introduced in many workshops. Some railways have closed certain workshops altogether.'[29]

By 1933-4, the effects of the postponement of essential expenditure had begun to be experienced and some increase in the cost of repairs and maintenance had to be provided for. In the following year, the Railway Member stated that

> 'to the extent that reductions represented merely a postponement of expenditure, the time is soon coming, if it has not already come, when it would be unwise and indeed unsafe to postpone it any longer.'[30]

The statistics for 1930-2 reflect the effects of these economies. The cost of repairs and maintenance of way and works and rolling-stock touched the lowest point. The net cost of way and works compared with 1924-5 was down by 17 per cent in 1931-2. Net rolling-stock expenditure recorded the largest decrease of 27 per cent, while net machinery, tools, etc., stood 14 per cent lower. The position on individual systems also indicated considerable reductions under repairs and maintenance. Compared with 1929-30, expenditure decreased substantially on most of the railways. Only the Assam Bengal had an increase. The largest decrease occurred during 1932-3. Measured by the standards of 1924-5, the extent of curtailment during this year on the S.I., and E.I., was 37 and 39 per cent respectively, while on the E.B. and B.B.&C.I., it amounted

[29] *Explanatory Memorandum to Railway Budget*, 1932-3, p. 5.

[30] Budget speech for 1934-5. The *Explanatory Memorandum* stated that 'the major economies that the railways could hope for immediately have already been realized and that to the extent that such economies were of the nature of postponement of expenditure, the time when this expenditure has to be undertaken comes even nearer and has in certain cases already come.' P. 11.

to 22·3 per cent. With the exception of the A.B., which had an increase of 50 per cent, all railways registered figures less than in 1924-5. How these economies were realized was thus commented upon by the Director of Railway Audit :

> 'A considerable portion of the economies effected here is merely of the nature of postponement of repairs and maintenance expenditure, not held to be emergent at present. Such postponement cannot go on indefinitely, and sooner or later, the postponed expenditure will take its vengeance in the shape of unsafe permanent way and stock, and probably, increased expenditure as well.... On one of the major railways an excess of Rs. 5·64 (lakhs) has had to be explained as due to "heavy repairs (to rolling-stock) found necessary on account of postponement of repairs in previous years." The engineering authorities of five railways (Burma, B.N., S.I., E.B. and A.B.) have not found it possible to issue clear certificates in respect of the condition and standard of maintenance of the permanent way, rolling-stock and other assets of the railway. It is possible that in some cases at least, the principle of "Safety First" might have been sacrificed at the altar of so-called "economies". It is pointed out that this policy would be extremely ill-advised as the postponed expenditure will, in any case (and probably in greater amount), have to be incurred later on.'[31]

During succeeding years it will be noticed that expenditure on repairs and maintenance tended to increase on all railways. This was inevitable so far as part of the economies consisted in the postponement of necessary expenditure. With the exception of the G.I.P., which showed a decline, increases occurred on all railways under repairs and maintenance. The Director of Railway Audit remarked in succeeding reports upon the refusal of the engineering authorities on certain railways to give clear certificates as to the condition and standard of maintenance of the assets.[32] By 1937 the position

[31] *Railway Audit Report* 1932-3, para 18, p. 18.

[32] *Cf. Railway Audit Reports*, 1935-7 (on the accounts of 1933-6) : 'The engineering authorities of at least four railways (*viz.*, the Assam Bengal, the Burma, the Eastern Bengal, and the South Indian) have not again found it possible to give clear certificates as to the condition and standard of maintenance of the assets of their railways.' (*Railway Audit Report* 1935, para 193, p. 77). 'In June 1934, the Railway Board informed the administrations that if a case could be made out to their satisfaction that expenditure was necessary in the interests of safety, they would be prepared to sanction extra funds for the purpose. In the year under report extra expenditure has been incurred in this direction. The position has thus improved, but the engineering authorities of three railways (*viz.*, the Assam Bengal, the Burma and the Eastern Bengal) have not found it possible yet to give clear certificates as to the condition and standard of maintenance of the assets on their railways.' (*Railway Audit Report* 1936, p. 55). In 1935-6 extra expenditure was incurred, but on two railways, the Assam Bengal and Burma, the

appears to have improved and the Wedgwood Committee stated that the arrears had been overtaken at the time of their enquiry.[33]

The records of state-managed and company-managed railways exhibit the same features as those mentioned under general administration. The six-year group averages for ordinary repairs and maintenance, shown below, indicate a general decrease during 1930-6 on the state-managed lines under all the three abstracts concerned A, B and C. The company-managed lines recorded a further increase under Abstracts A and B—a very large one indeed under the former —and a decrease under Abstract C.

TABLE 76. EXPENDITURE ON ORDINARY REPAIRS AND MAINTENANCE ON STATE-MANAGED AND COMPANY-MANAGED RAILWAYS

(1924-25 = 100)

	State-managed railways			Company-managed railways		
Abstracts	1924-30 Average	1930-6 Average	Inc. or dec.	1924-30 Average	1930-6 Average	Inc. or dec.
A	108·4	99·6	– 8·8	113·4	133·6	20·2
B	102·6	93·8	– 8·8	120·6	121·6	1·0
C	106·0	80·2	–25·8	101·0	94·2	–6·8

III. OPERATION

The next group of railway expenditure, classified under the head 'Operation', includes the disbursements made by railways for purposes connected with actual operation. The expenditure on operation is subdivided into two heads, 'Operation excluding fuel' and 'Fuel'.

The cost of operation, excluding fuel, stood in 1924-5 at Rs. 15·54 crores. From the next year, as shown in Table 77, there was an increase which amounted to 10 per cent in 1928-9, and 13 per cent in 1930-1. The emergency and economy measures and lower prices during succeeding years brought expenditure to the basic level by 1934-5.

engineering authorities could give only qualified certificates as to the condition and maintenance of the assets. (*Railway Audit Report* 1937, para 35, p. 17.)

[33] 'We are assured.. .that arrears of this kind (non-essential repairs) have in general been overtaken.'—*Wedgwood Committee Report*, para 25, p. 15. Reviewing the expenditure under Abstract A, the committee found an overall reduction of 20 per cent had been effected by 1935-6 as compared with 1929-30. As the arrears were stated to have been overtaken, the decrease was deemed by them 'real economy' and 'very creditable'.

TABLE 77. EXPENDITURE ON OPERATION (EXCLUDING FUEL)
(STATE-OWNED RAILWAYS)

(*Rs. in crores*)

Year	Rs.	%	Year	Rs.	%
1924-5	15·54	100	1930-1	17·60	113
1925-6	16·44	106	1931-2	16·21	104
1926-7	16·27	105	1932-3	15·62	101
1927-8	16·24	105	1933-4	15·69	101
1928-9	17·16	110	1934-5	15·49	100
1929-30	17·05	110	1935-6	15·27	98

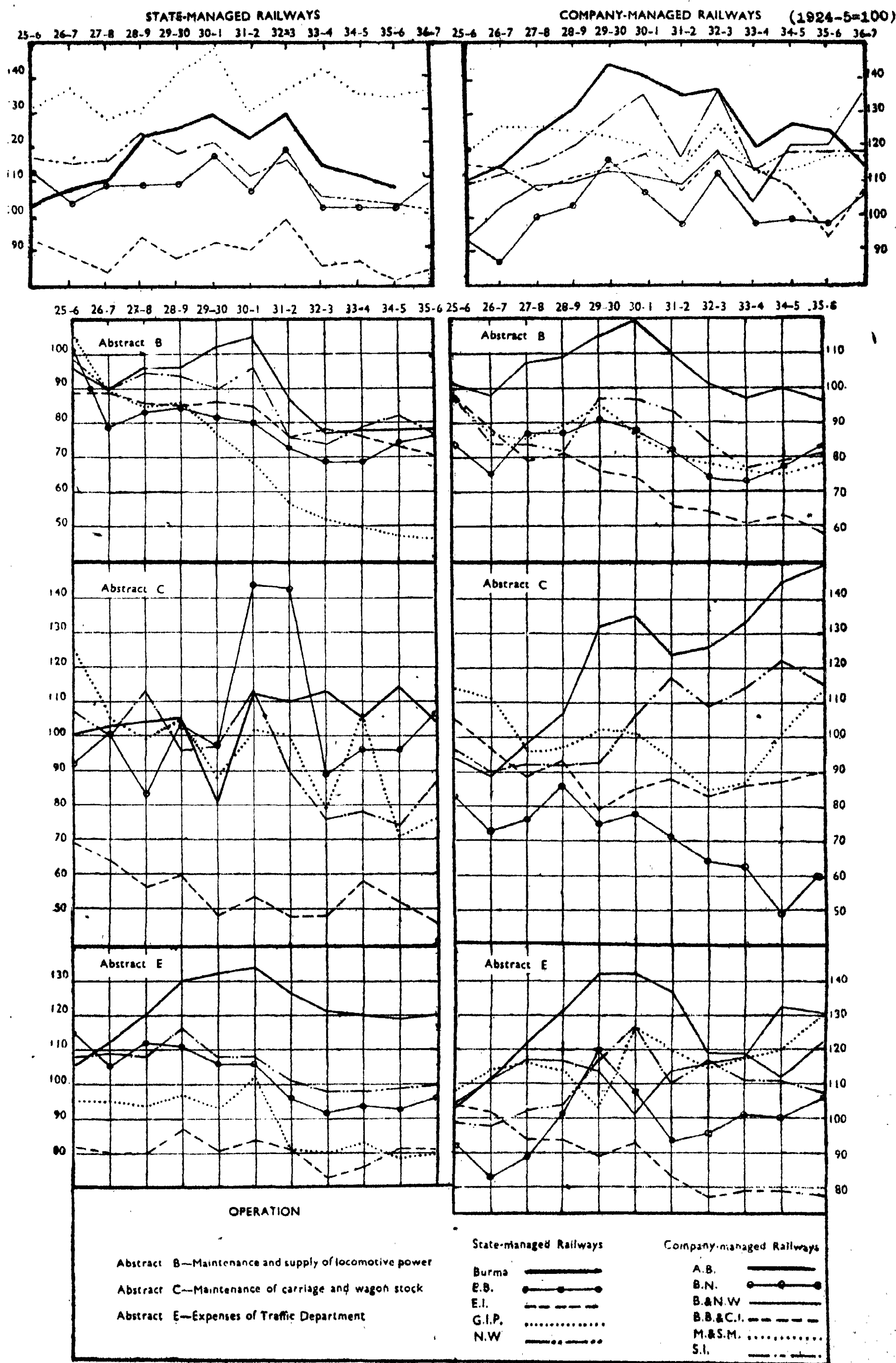
* The figures from 1924-32 are taken from the *Explanatory Memoranda* to the Budgets. Owing to an accounting change the figures for 1932-5 are disturbed by the inclusion of provident fund contributions and for purposes of proper comparison, the figures have been taken from the Financial Commissioner's adjusted figures in his *Reviews* for 1933-5. The figures for 1935-6 have been compiled from the accounts figures of the year.

The cost of operation on individual railways during the period may be seen from Figure VIII. The tendency towards an increase appears to be accentuated on certain lines. This was, however, partly offset by the lower rate of increase on the other systems. Between 1924 and 1930, all the railways with the exception of the E.I.,[34] recorded increased expenditure on operation. As may be seen from the trends shown in the chart, by 1929-30 the percentage increases varied from 9 to 44. Expenditure during the depression showed levels well above those of 1924-5. Even during 1932-3, which reflected the maximum effects of retrenchment and economy, the G.I.P., A.B. and S.I. had a comparative increase of more than 35 per cent. The Burma and M.&S.M. showed percentage increases of 29 and 26 respectively, while the E.B. and B.B.&C.I. recorded an increase of 18 per cent. Only the E.I. had a percentage of 99. Further reductions occurred in following years on all the railways, excepting the G.I.P.

Expenditure on operation forms an important minor head in three abstracts, B, C and E. The trends of expenditure under these abstracts may be seen in Figure VIII. A comparatively small amount of expenditure is also booked under Abstract F.

[34] The basic figure for 1924-5 for the E.I. is the total of the separate figures of the E.I. and O.&R. Some decrease may be allowed for the economies attributable to the amalgamation of the two lines.

FIGURE VIII. COST OF OPERATION 1924-36
(STATE-OWNED RAILWAYS)



The cost of operation incurred by the locomotive department, including fuel (Abstract B) is one of gradual decrease as compared with 1924-5. Except on the Burma for two years, 1929-31, and the A.B. for 1927-33, all the lines disclose a substantial fall.

Of the several items included under this abstract, the cost of running staff and fuel alone accounts for more than 90 per cent of the total under operation. Fuel, which amounted to 50-70 per cent, was the principal factor which contributed to the decrease in expenditure on operation as a result of the decline in the cost of fuel. Part of the decrease must have been offset by the increased engine and train milage before the depression. The reduction since 1931 was caused by both the decrease in the cost of fuel and the reduced engine and train milage. These are clearly brought out by the six-year averages. It may be observed from Figure VIII that except on the A.B. and Burma, even by 1929-30 the general level had come down.

TABLE 78. SIX-YEAR AVERAGES OF EXPENDITURE ON OPERATION UNDER ABSTRACTS B, C & E*

(*Rs. in lakhs*)

	State-managed					*Company-managed*			
Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %	Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %
				Abstract B					
Burma	65·13	97	84	−13	A.B.	18·26	105	104	− 1
E.B.	75·26	88	74	−14	B.N.	107·90	88	80	− 8
E.I.	228·20	89	76	−13	B.B.&C.I.	202·61	87	64	−23
G.I.P.	296·29	91	54	−37	M.&S.M.	120·94	92	79	−13
N.W.	304 62	95	81	−14	S.I.	95·31	91	85	− 6
				Abstract C					
Burma	1·83	99	110	11	A.B.	0·87	103	135	32
E.B.	5·30	96	113	17	B.N.	11·40	82	64	−18
E.I.	34·08	66	51	−15	B.B.&C.I.	9·43	94	87	− 7
G.I.P.	18·98	104	89	−15	M.&S.M.	3·86	103	97	− 6
N.W.	32·04	102	87	−15	S.I.	4·51	94	114	20
				Abstract E					
Burma	30 62	116	123	7	A.B.	17·01	118	125	7
E.B.	73·88	108	96	− 12	B.N.	87·18	99	101	− 2
E.I.	252·59	85	79	− 6	B.B.&C.I.	126·05	97	82	−16
G.I.P.	143·25	96	84	−12	M.&S.M.	48·96	109	121	−12
N.W.	161·59	108	101	− 7	S.I.	40·34	103	114	11

* Percentages calculated on figures taken from *Railway Board's Report*, Vol. II.

The total operating expenditure under Abstract C is comparatively less than the cost under the other minor heads.[35] State-managed railways had considerable fluctuations from year to year. The E.I. had a remarkable decrease in 1925-6, after which its percentage remained between 50 and 60. Barring an exceptional rise on the E.B., the other state-managed lines remained within a margin of 15 per cent of the basic level.

The company-managed railways showed greater uniformity in their trends. There was a general tendency towards a decrease. The only exceptions were the A.B., S.I., and, since 1934, M.&S.M. The pre-depression and depression averages denote a material reduction on all but four lines. It is interesting to note the unusually wide spread in the percentages of company-managed railways during the depression as compared with the pre-depression period.

The bulk of the expenditure under Abstract E is incurred mainly under the head of operation.[36] The salaries, wages, and allowances of the operating, station and train staff account on the whole for about three-quarters of the cost of the traffic department. They vary, of course, on the individual railways from 55 to 90 per cent of the total operating expenses under the abstract. It should be observed that the station staff take up about one-half of the total cost of operation, and it was, in fact, 60 per cent and over on four systems, and 50 per cent on four others. The expenditure on the train staff was approximately 15 per cent and that on 'other' staff from 4 to 16 per cent on the different lines, the average being about 7 per cent of the total cost of operation for the traffic department.

The cost of operation for the traffic department during the period reveals material differences in the record of the

[35] The operating expenses under Abstract C consist of the cost of inspection of running vehicles, representing the wages of examiners, cleaners, oilers, etc., and the cost of oil grease and other grease; payments to other railways on account of hire charges for carriages and wagons, etc., obtained on loan for general use on the home line after deducting receipts from other railways on similar account; and miscellaneous, as under other abstracts.

[36] The operating expenses under Abstract E are classified as follows:

(1) Salaries, wages and allowances of the general operating, station, and train staff, and travelling ticket examining staff; (2) fires, lights and general stores, for stations and sheds; (3) lighting, water and general stores in trains; (4) clothing; (5) stationery, forms and tickets; (6) expenses of handling, collection and delivery of goods; (7) expenses at out-agencies; (8-11) Compensation for goods lost; miscellaneous etc.

state-managed and company-managed railways. Among the former, the E.I., and G.I.P. had a substantial decrease from 1925 onwards. If the Burma Railways, with its large percentage increase throughout, is excluded, all the State lines had expenditures well below the basic level from 1932-3 onwards. Company-managed railways on the other hand were generally above their basic levels throughout the period. Only the B.B.&C.I. and, since 1931, the B.N. decreased their cost of operation to lower percentages. The six-year averages disclose a decrease on all lines, except four, namely, the Burma, A.B., M.&S.M. and S.I.

The trend of expenditure on operation during 1924-36 is thus one of general decrease under all the abstracts affected. We may sum up the main features of the expenditure included under this head with a reference to the more important items. A large part of the expenditure is, as stated earlier, under staff, amounting to more than 70 per cent of the total cost of operation (excluding fuel). The staff consists of station staff, running staff and 'other' staff. Frequent changes in accounting make it impossible to examine the expenditure under these three heads to the end of the period, but the statistics given below afford a general idea of the relative importance of the three categories of staff.

LE 79. OPERATION (EXCLUDING FUEL) : COST OF STAFF*

(STATE-OWNED RAILWAYS)

(In thousands of Rs)

Year	Station staff	Running and 'Other' staff		Total staff
1924-5	5,63	5,18		10,81
1925-6	5,88	5,18		11,06
1926-7	6,02	5,26		11,28
1927-8	6,08	5,66		11,74
1928-9	5,26	4,64	2,20	12,10
1929-30	5,51	4,78	2,29	12,58
1930-1	5,46	4,75	2,32	12,53
1931-2	5,59	4,42	2,15	12,16
1932-3	..	..	..	12,41
1933-4	..	..	..	12,27
1934-5	..	..	..	12,21
1935-6	..	..	..	12,13

* Compiled from the demands for grants for each year.

The cost of station staff in 1924-5 exceeded that of the running and 'other' staff combined. As shown by the separate figures available for 1928-32, the cost of 'other' staff was approximately rather less than that of the running staff.

During 1924-32, for which the cost of station staff is available, the percentage rose to 108, and decreased to 99 in 1931-2. As the cost of running and 'other' staff was presented in one total prior to 1928-9, they may be taken together for purposes of comparison. The total figures for 1929-32, expressed as a percentage of 1924-5, indicate a considerable increase, one of 32 per cent in 1928-9 and 36 per cent in 1929-31. A slight decrease in the following year reduced it to 27.

The total expenditure on operating staff affords a better picture of the general trend since 1924-5. From Rs. 10·81 crores, there was a gradual increase to Rs. 12·58 crores in 1929-30, an increase of 16 per cent. In succeeding years, there was only a slight decrease by 1935-6, and the percentage stood at 112.

The remaining items may be grouped under three heads : (1) contingent charges and clothing; stationery, forms and tickets; and stores; (2) compensation for goods damaged or lost; and (3) expenses of handling goods at out-agencies and miscellaneous. A decrease, as may be seen from the figures given below, is recorded under the first two items. The record under compensation, a reduction to 5 per cent of the basic figure, must be deemed a remarkable achievement. That the improvement was neither spasmodic nor accidental is amply proved by the steadiness of the decline, particularly during years of increased traffic.

TABLE 80. OTHER OPERATING EXPENDITURE*

(*Rs. in lakhs*)

		1924-5	1925-6	1926-7	1927-8	1928-9	1929-30	1930-1	1931-2	1932-3	1933-4	1934-5	1935-6
Contingent charges, clothing, stationery forms, tickets, stores.†	Rs.	2,92	2,78	2,67	3,07	2,98	3,01	3,01	2,43	2,18	2,10	2,18	2,11
Per cent of 1924-5		100	95	91	105	102	103	103	83	75	72	75	72
Compensation	Rs.	58	29	15	9	11	9	8	5	4	3	3	3
Per cent of 1924-5		100	50	26	16	19	16	14	9	7	5	5	5
Handling charges	Rs.	39	2,38	2,32	1,50	1,81	1,72	1,75	1,62	1,27	1,44	1,25	1,18

* Figures are taken from the Railway Budget papers for each year.
† As separate figures are not available for earlier years the items are taken together.

The expenditure on operation on the whole showed room for further economy. As the greater portion of the expenditure was under staff, the measures of economy pursued under this head during recent years was counteracted by the application of the Hours of Work Regulations. That the scope for further reduction had not been entirely exhausted was clear from the expectations of the Wedgwood Committee as to further possible 'economy at medium-sized and larger stations.'[37] If the cost of operation depends on the volume of traffic and represents the direct expense of handling it, the reduction in that volume ought naturally to have led to a corresponding decrease in that expense. The foregoing survey indicates that the cost of operation responded more readily to the increase in traffic, while the reduction in expenditure was on the whole less in proportion to the decrease in the transportation effected.

The performance of company-managed railways under operation has been similar to that indicated under the other minor heads. The group average indicates an increase under Abstracts C and E, and a large reduction under B. State-managed lines, on the other hand, recorded during 1930-36 a decrease under all these abstracts, the amount under Abstract B, being as much as 18·2 per cent.

TABLE 81. EXPENDITURE ON OPERATION ON STATE-MANAGED AND COMPANY-MANAGED RAILWAYS

(1924-5 = 100)

	State-managed railways			Company-managed railways		
Abstract	1924-30 Average	1930-6 Average	Inc. or dec.	1924-30 Average	1930-6 Average	Inc. or dec.
B	92·0	73·8	−18·2	92·6	82·4	−10·2
C	93·4	90·0	− 3·4	95·2	99·4	4·2
E	102·6	96·6	− 6·0	105·2	108·4	3·2

IV. FUEL

The cost of fuel is included separately under operation on account of its special characteristics. Expenditure on fuel is made up of the cost of coal, other fuel, freight and handling charges, and electric power. The total expenditure incurred

[37] *Wedgwood Committee Report*, para 65, p. 35.

in 1924-5 was Rs. 10·58 crores and formed the largest single item of expense in operation. Of this the cost of coal and other fuel amounted to Rs. 6·43 crores, and the cost of freight and handling charges and electric power to Rs. 4·15 crores. It is only from 1928-9 onwards that detailed figures for other fuel and electric power are available. It will be seen from the statistics given under Table 82 that the cost of other fuel was less than half a crore till 1930-1 after which it decreased to Rs. 29 lakhs in the following year, and to Rs. 14 lakhs in 1935-6. The cost of electric power is also small in comparison, and amounted to less than half a crore. The cost of handling charges represents the largest single item under fuel. In 1927-8 it was Rs. 5·06 crores out of a total fuel cost of Rs. 8·88 crores. The same feature is to be observed during succeeding years also.

TABLE 82. EXPENDITURE ON FUEL*

(STATE-OWNED RAILWAYS)

(*Rs. in lakhs*)

		1921 5	1925-6	1926-7	1927-8	1928-9	1929-30	1930-1	1931 2	1932 3	1933 4	1934-5	1935-6
Coal } Other fuel }	Rs.	6,43	5,25	4,21	3,67	3,06	3 06	3,05	2,75	2,57	2,36	2,43	2,49
						49	46	43	29	23	26	20	14
Freight etc.	Rs.	4,15	5,02	4,58	5,06	5,05	4,98	4,70	3,90	4,02	3,96	4,20	3,97
Electric power					15	27	43	45	45	45	47	45	45
Total fuel	Rs.	10,58	10,27	8,79	8,88	8,87	8,93	8,62	7,39	7,27	7,04	7,29	7,05
Percentage of 1924-5		100	97	83	84	84	84	81	70	69	67	69	67

* Figures taken from Railway Budget papers.

We may now take the cost of coal and other fuel for comparison. As may be seen from the percentages, there was a steady decline in the cost of fuel. From a percentage of 84 in 1929-30, it dropped to 67 in 1935-6. The decrease was largely due to the cost of coal and other fuel. From Rs. 6·43 crores in 1924-5, the expenditure on account of these two items amounted to Rs. 3·52 crores in 1929-30 and to Rs. 2·63 in 1935-6, a decrease to 55 and 41 per cent, respectively. This is mainly to be attributed to the great decline in the price of coal itself.[38] The increased consumption due to additional

[38] The cost of 'Coal and other fuel' as compared with the average price of coal during 1924-32 is as follows :

(1924-25=100)

	1924-5	1925-6	1926-7	1927-8	1928-9	1929-30	1930-1	1931-2
Cost of coal	100	82	65	57	55	55	54	47
Average price of coal (All-India) Rs.	7-1	6-1	4-13	4-5	3-15	3-13	3-14	3-13
Per cent of 1924-5	100	86	68	61	56	54	55	54

train milage must obviously have been met by economies carried out under the fuel economy campaign.

Freight and handling charges in connexion with the supply of coal and other fuel constitute the heaviest expense. The cost amounted to Rs. 5·06 crores in 1927-8, against an expenditure of Rs. 3·67 crores on coal and other fuel, and Rs. 15 lakhs on electric power. Taking the cost of freight and handling charges and electric power together, the expenditure in 1924-5 was Rs. 4·15 crores. In 1929-30 it increased to Rs. 5·41 crores. By 1935-6 the cost came down to Rs. 4·42 crores, as compared with Rs. 2·63 crores towards the cost of fuel.

The expenditure incurred on fuel by different railways reflected, as shown by the six-year averages, a general decrease throughout. On some railways where important sections were electrified, as on the B.B.&C.I. and G.I.P., there was a larger reduction. But on the whole the cost of fuel revealed the effect of lower prices more faithfully than probably any other item of railway expenditure. Large economies were also effected in fuel consumption through improved methods.[39] To these twin factors must be attributed the substantial reductions in the cost of fuel during the period.

TABLE 83. SIX-YEAR AVERAGES OF EXPENDITURE ON FUEL*

(*Rs. in lakhs*)

State-managed					*Company-managed*				
Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %	Railways	1924-5 Rs.	1924-30 Average %	1930-6 Average %	Inc. or dec. %
Burma	45·77	92	77	−15	A.B.	14·22	101	96	− 5
E.B.	52·45	83	66	−17	B.N.	62·30	81	72	− 9
E.I.	125·79	87	74	−13	B.B.&C.I.	132·83	87	62	−25
G.I.P.	209·46	91	51	−40	M.&S.M.	85·28	89	72	−17
N.W.	228·65	91	74	−17	S.I.	65·95	86	79	− 7

* Percentages calculated from figures taken from Railway Budget papers.

CONCLUSION

We have now traversed the entire field of ordinary working expenditure in detail. The main feature in the trends of expenditure is the immoderate increases which characterized many of the items. The real increase, when the monetary

[39] The subject of fuel consumption in relation to operating factors is discussed in some detail in Chapter X *infra*.

expenditure is converted in terms of purchasing power, is even greater than the figures suggest on account of the decline in general prices since 1924. Before pronouncing an opinion as to the justification for the increase in working costs since that year, two facts must be borne in mind. Firstly, Indian railways, as we have seen already, extended their net and the entire system was larger in size by 1932 than it was in 1924. Obviously the cost of maintenance would be higher for a larger system. Secondly, railways constitute a commercial under-taking on which expenditure varies with the volume of transportation effected. The increase in the cost of working must, therefore, be appraised in the light of the business done by railways.

As to the first, we have already seen, that many of the new lines constructed since 1924 proved financially unsuccessful. Their current maintenance and upkeep consequently became a drain on the parent lines. The effect of the enormous open line capital expenditure has been even more insidious. It was on a larger scale and less amenable to control. Part of the increase in current maintenance and operation may surely be attributed to the effect of these two factors.

The amount of business done by railways during 1924-37 has not been such as to justify the extent of increase that occurred in working costs. The abnormal inflation in the cost of general administration has already been commented upon in detail. One would usually look for a comparative decrease under this head with every increase in transportation. It is impossible to justify so considerable a rise either from the trends of gross earnings or of passenger and goods earnings. Nor does the volume of traffic handled offer an adequate explanation. Enough has been stated in the foregoing paragraphs to indicate the nature and extent of the increase under the individual items.

In an essentially financial review it is not possible to examine the wisdom of certain classes of expenditure. Money may be spent under certain heads which may not bring in a direct financial return, but may be valuable in increasing the efficiency

of operation or in improving the relations with the public and in cultivating their goodwill. Large sums of money were spent during the post-separation period in providing increased amenities to the travelling public. Such expenditure would certainly have the effect of safeguarding, indirectly, the financial interest of railways, and thus proving, at a time of severe competition with road transport, no less important than expenditure from which a definite return is expected. There was during this period, as will be shown later, a general advance in the efficiency of operation. But the rise in the cost of operation has been substantially higher than the ascertainable enhancement of operating efficiency.

In the course of our survey attention was drawn to the differences in the performance of state-managed and company-managed railways. The student of railway economics inclined to the view that, whatever the merits of state operation, private management always scores in point of efficient and economical management, will experience a shock on seeing the record of some of the company-managed lines. It is likely to be lessened when he considers that even so distinguished an advocate of company management as the late Sir William Acworth could, in the report of his committee, find little to differentiate between state-managed and company-managed railways in India. In fact, one has to turn to the B.B.&C.I., whose incentive was stimulated by the prospect of earning much more than the interest guaranteed by the State, or the B.&N.W.—a purely private company—to see what private operation under better circumstances could achieve in this country.

The trends of railway expenditure suggested greater effectiveness of financial control on state-managed lines. This lends support to the view that the company-managed railways did not fall so readily into line with the policy of reducing expenditure as state-managed lines. While there could have been no opposition to the policy on the part of the company-managed railways, railway managements standing on their contracts and responsible to their boards in London respond

differently from a State department which has to carry out without question the decisions of the Finance Member. Hence must have occurred the tardiness exhibited by the trend lines of expenditure on the company-managed railways during the depression period. This position was far from satisfactory as the company-managed lines had taken advantage of the approval of the State to embark on increased expenditures while they were less inclined to decrease them at a time of financial stringency.

The present study of railway expenditure emphasises another aspect of railway operation. It was expected that the separation of the railway budget and the principle of treating railways as a commercial undertaking would provide adequate incentives for efficient and economical working. The record since 1924 appears to be that railways have been operated in a manner more akin to a public works department than a commercial concern. Thus during the pre-depression period the breezy optimism which characterized the policy of capital expenditure must have infected the attitude towards revenue expenditure policies as well. Railway managements which undertook the construction of stations, workshops and marshalling yards to be, in the words of the Wedgwood Committee, 'the last word in railway technique rather than on a careful calculation of probable requirements' and the introduction of a signalling system 'more expensive than the circumstances have justified' did not exhibit the business sense that was expected of authorities operating a commercial undertaking. The cost of maintenance of structural works was found to be in excess of the increase in the length of track. The same story is also told by the other abstracts of railway expenditure. In the case of locomotives, carriages and wagons (Abstracts B and C), the Wedgwood Committee found in 1937—more than six years after the economy campaign had been started—'room for substantial economy'. The stock of locomotives, they stated, was excessive. The disparity in the demand for, and the supply of, passenger accommodation has already been

discussed earlier.[40] The stock of wagons was also excessive.[41] The mischief does not stop with the initial expenditure in acquiring them. Their worst feature is the excessive cost of maintenance and operation with which railways have been burdened.

The knowledge that the State was behind them must have weakened the profit-earning motive of state-managed railways. The financial administration of railways during the depression period betrayed a reluctance to face facts and a total unpreparedness to effect a thorough-going overhaul of railway expenditure. Railway managements preferred rather to postpone dealing with the urgent problems than to tackle them effectively. Their record on the whole was not unlike other Government departments, and entirely different from that of a business concern which finds itself in a similar plight.

The fact that even the company-managed lines which were more commercial in their outlook in the past have not acted differently from the state-managed railways probably suggests that the policy of state operation so unequivocally accepted held out no future to them. They looked forward to being taken over by the State on the expiry of their contracts. The separation of railway finance and the reorganized Railway Board made no change in their position under the contracts. So long as they enjoyed the guaranteed interest on their private investment they had little to worry about, unless the prospect of getting surplus profits—that is, in excess of the guaranteed interest—persuaded the companies to exert a pressure on growing expenditure.

The association of the State in an enterprise of this kind always creates complications, and the special conditions prevailing in this country need to be discussed separately. It seems fair to conclude that, judged strictly from the point of view of business principles of operation, a change in financial policy and direction seems to be indicated.

[40] Chapter IV, p. 171 *et seq.*
[41] *Wedgwood Committee Report*, para 46, p. 28.

On final analysis, cost is a product of labour and material charges. Of these two, the former has gone up during recent years, offsetting not only the decrease in the latter, owing to lower prices, but representing a substantial net increase. The cost of railway personnel, therefore, calls for examination. The period under review was one of general improvement of standards of pay and working conditions. The policy of the State to bring railways into line with the principles accepted by Government as a party to international agreements on labour standards and in response to domestic pressure, imposed on railway administrations obligations over which they had no control. In view of the importance of the subject, the developments since 1924 are treated separately in a later chapter.

CHAPTER VIII

RAILWAY EXPENDITURE : DEPRECIATION

ADEQUATE provision for depreciation is vital to the financial integrity of a commercial undertaking. The cost of current repairs to, and maintenance of, assets in proper condition is usually met from revenue, but renewals and replacements of whole assets which go out of use render a separate provision necessary. The preservation of capital intact and without impairment on account of wear and tear or other causes also makes it imperative that an adequate reserve is built up. The precise relation between current maintenance and renewals has always been a point for nice distinction, but there has been even greater controversy on the practical aspects of calculating the provision for depreciation.

Indian railways under the influence of the British practice, had taken into account the factor of depreciation, and prior to 1875 renewal funds existed on several of the old guaranteed companies.[1] In that year, however, the Secretary of State on the representation of the Government of India, decided that the continued maintenance of such funds was undesirable, because, having regard to the terms of the contracts with

[1] *Depreciation Fund Committee Report*, 1922-3, p. 1.

those companies, their existence led to results unfavourable to the State. With the gradual acquisition of most of the railways by the State and the substantial variations in the contracts with the companies working them, the position gradually became modified. The absence of the provision for depreciation was keenly felt during and after the last war on account of the unavoidable postponement of renewals and replacements of permanent way and rolling-stock. The policy adumbrated in 1875 had continued all through, and only in the case of the B.&N.W. and R.&K., which were private companies, was a departure permitted during the war to establish renewal reserve funds by debiting the revenue account for the period with the proper liability in respect of renewals.

How serious the rehabilitation problem appeared in 1920 and how strongly the Acworth Railway Committee animadverted on the policy of Government regarding the provision for renewals have already been referred to in the opening chapter. The committee deplored the failure to establish a reserve fund which could have been drawn upon when materials were available. Recommending the adoption of commercial principles of accounting, the committee stated that 'by the time the useful life of an asset . . . has expired, its full original cost should have been written off out of revenue.'[2]

The Hailey Committee also discussed this question in their report and observed :

> 'We consider that the present method of providing for depreciation not by a proper depreciation fund, but by allotting each year a grant from revenue for expenditure on renewals and replacements is open to many objections. We, therefore, recommend that early steps should be taken to calculate the rates of depreciation which should be allowed for the various classes of railway plant and material in order that the recurrence of the deterioration which has taken place in recent years may be avoided and depreciation for renewals and repairs (*sic*) provided for automatically.'[3]

The Inchcape Committee, endorsing in their report the same proposal, said that it should be laid down that each railway

[2] *Acworth Committee Report*, para 67, p. 30.
[3] *Hailey Committee Report*, para 14.

should make adequate provision every year for the maintenance and renewal of its permanent way and rolling-stock and that the funds so earmarked should be debited to working expenses and carried to a suspense account, which could be drawn upon when necessary to meet current requirements and expenditure, the balance being carried forward from year to year.[4]

DEPRECIATION FUND COMMITTEE

In 1922 the Railway Board had already constituted a Depreciation Fund Committee to examine the problem of depreciation accounting[5] for Indian railways. The committee, after making a detailed investigation into all aspects of the question, estimated the provision for annual depreciation in respect of wasting capital assets on 31 March 1922, at Rs. 12·26 crores, and the arrear depreciation at Rs. 19·95 crores. They recommended that the annual normal depreciation of the wasting capital assets should be calculated on the basis of the estimated economic or functional life of each class of asset and replacement prices, on the assumption that an equal part of the life of the assets expired each year. In the case of new lines a progressive rate of depreciation charges was laid down. For the existing lines the committee proposed the institution of a fund on each railway to be drawn upon by the administration as if the amount had been separately invested by it. As regards arrear renewals and replacements, the money was to be provided from borrowings, repayable from revenue on an annuity basis.

These recommendations were not accepted in full by the Government of India and their final decision, in consultation with the Secretary of State, differed in certain material respects. The alterations proposed in the rules of allocation of expenditure between capital and revenue could only be introduced on the state-managed railways. Difficulties were experienced in applying the Depreciation Fund Committee's proposals to the company-managed railways. A re-allocation of capital

[4] *Inchcape Committee Report*, para 7, p. 93.
[5] A brief summary of the terms of reference and the principal recommendations of the committee is given in the appendix.

and revenue on the company-managed lines would, unless the terms of the contracts were modified by negotiation with the companies, have affected the financial interests of the State. It was, therefore, decided that the position of the company-managed railways should not be affected but provision was made to include them also in the Government accounts.[6] On 1 April 1924, the former system of expenditure on renewals and replacements directly from revenue voted from year to year was abandoned and the depreciation fund was established for all the State-owned railways as part of the new regime under the Separation Convention.

PRINCIPLES OF THE DEPRECIATION FUND

According to the rules governing the depreciation fund, the assets of the railways were broadly divided into two parts, wasting assets and non-wasting assets. Into the latter category, for example, was placed land, which did not waste. Such assets of railway property as the permanent way, bridges, rolling-stock, buildings, etc., did wear out and provision was to be made for only these classes of assets. Both the character of the assets and their estimated lives were worked out in detail and incorporated in the rules.[7]

The principles of depreciation accounting were stated as follows :

(1) The depreciation fund was intended to provide for the original cost of each particular unit of wasting asset, by the time its useful life had expired, and the contribution was the total cost divided by the prescribed life. Consequently, the provision continued during the whole period of its prescribed life and ceased at the end thereof, irrespective of when it was replaced.

[6] The main reason for the differential treatment in the case of the company-managed railways is that the contracts with them make the excess cost of replacement of like by like a debit against revenue and not capital. If the treatment of appropriations from the fund in the case of the company-managed railways were assimilated to that for the state-managed railways, two sets of capital accounts would have to be kept, a procedure which might lead to confusion. In working out the Government share of surplus profits of, and Government contributions, guarantees etc., to, the company-managed railways and branch lines, the depreciation fund transactions with respect to them are ignored and calculations made as before the institution of the fund.—See *Railway Audit Report* 1929-30, p. 79,

[7] *Railway Account Code* Vol. I, 1932, pp. 4-5, 193.

(2) On replacement, expenditure to the extent of the original cost of the article was found from the depreciation fund and the difference between the original cost and the replacement cost was debited or credited to capital according as the cost of replacement was more or less than the original cost.

(3) The depreciation fund dealt only with whole units and the annual contributions from revenue were based only on these. Similarly, it was only when whole units were replaced that the cost was charged to revenue along with ordinary repairs.

(4) As the depreciation fund did not provide for non-wasting assets, such as land and works, technically described as formation (earthwork, tunnels, walling and side-drains), it was considered preferable in the event of large expenditure in connexion with individual cases, to make special arrangements for the expenditure, such as borrowing from the depreciation fund or from capital and recouping the expenditure by equated payments from revenue spread over a series of years. No provision was made for fencing and ballast as the expenditure on their replacement did not vary from year to year and for other assets on the ground that they had so long a life that it was not necessary to provide in the fund for their replacement.[8]

The classes of assets affected and their estimated life were as shown in the accompanying table.

TABLE 84. DEPRECIABLE ASSETS AND THEIR ESTIMATED LIFE*

	Class of asset	Normal life years	Unit
(1)	Bridgework—steel-works	60	(a) An entire span of girders. (b) Steelwork on an individual bridge originally costing more than Rs. 10,000.
(2)	Bridgework—masonry	125	An entire abutment, pier or arch.
(3)	Permanent way—rails and fastenings	60	Rails and fastenings.
	Points and crossings	40	Points and crossings.
(4)	Permanent way—sleepers, wood	15	Sleepers, wood.
(5)	Permanent way—sleepers, cast iron and ferro-concrete	40	Sleepers, cast iron and ferro-concrete.
(6)	Permanent way—sleepers, steel trough	30	Sleepers, steel trough.

* *Railway Account Code*, 1932, Vol. I, pp. 4-5.

[8] *Financial Commissioner's Review* 1934-5, pp. 43-4.

	Class of asset	Normal life years	Unit
(7)	Buildings—masonry	200	(a) An entire building. (b) A part of a building when the part originally cost more than Rs. 25,000.
(8)	Buildings—all others	50	(a) An entire building. (b) A part of a building, when the part originally cost more than Rs. 25,000.
(9)	Station machinery	40	An entire unit of station machinery.
(10)	Plant	20	An entire unit of plant or an entire machine.*
(11)	Ferries	40	An entire vessel, engine or boiler.
(12)	Rolling-stock—locomotives, engines and tenders	35	(a) An entire engine.† (b) An entire tender.
(13)	Rolling-stock—locomotives, boilers	25	An entire boiler.
(14)	Rolling-stock—carriage and wagon—coaching vehicles	30	An entire vehicle.
(15)	Rolling-stock—carriage and wagon—goods vehicles	40	An entire vehicle.
(16)	Motor vehicles—rail	20	An entire vehicle.
(17)	Motor vehicles—road	10	An entire vehicle.
(18)	Electric instruments and telephones	13	All articles.
(19)	Electric power stations and sub-stations—buildings	30	(a) An entire building. (b) A part of a building, when the part originally cost more than Rs. 25,000.
(20)	Electric power stations—plant	20	An entire unit of plant or an entire machine.
(21)	Electric locomotives	35	An entire locomotive.
(22)	Electric overhead equipment of track	50	All articles
(23)	Internal electric wiring of buildings	10	25 per cent or over of the complete installation in any one building.

* Loose hand tools do not constitute a unit.

† The depreciation fund bears the cost of building an engine if undertaken as one operation.

	Class of asset	Normal life years	Unit
(24)	Electric motors	10	An entire motor.
(25)	Electric fans (ceiling, desk and bracket)	25	A complete appliance
(26)	Domestic and office electric appliances other than those mentioned in 25 above, *e.g.* electric radiator	5	A complete appliance

The depreciation fund was maintained and operated on these principles, without changes in essentials, from 1 April 1924 to 31 March 1935. It should be observed that the system as finally adopted made no provision for the arrears of depreciation. The question was considered at the time of its inception, but the problem of ascertaining what would have been the balance in the depreciation fund if the fund had been started from the opening of each line was too laborious a task to be attempted, and even if that had been done, it was doubtful if any result approaching accuracy would have been reached. If there was no attempt to work the theoretical arrear depreciation, some estimates of the arrears and renewals were available. The Depreciation Fund Committee's figure of Rs. 20 crores, on 31 March 1922, took into account the immediate requirements of the principal railways for future programs owing to obsolescence, restrictions on renewals during the war period, etc. The Inchcape Committee having made an estimate of the amount by which expenditure on renewals during the war period fell short of what would normally have been spent, adopted a figure of Rs. 18·5 crores as the amount of arrears which railways should pay into a reserve in about five years. After a careful consideration, the Government of India decided not to impose on railways the responsibility to provide within a fixed period for the arrears, in view of the fact that the reserve to be built up under the convention has, as its first charge, the liability of making good arrears of depreciation.

The effects of the new depreciation accounting system are best discussed in the light of the character of the changes

they represented on the older system. The institution of the depreciation fund meant not only the emergence of a new factor in working expenditure; under the rules adopted, it also affected the capital account of the railways. On the expiry of its life, an asset may, on account of improvements in technique and the progress of invention, be replaced by a more efficient and expensive unit. In such a case the cost of the original unit will be charged to the depreciation fund and the additional cost attributable to the greater efficiency of the new asset to capital. But in replacing an asset by a like asset, the prevailing costs have an important bearing. If the price level remains unchanged, the procedure is simple; the cost of replacement will be met from the fund. But prices of materials and labour do change, and in the event of a variation, the problem arises as to what will be the charge to working expenses, revenue, through the depreciation fund. The question becomes specially important during a period of higher prices, when the replacement of an asset by a like asset involves a larger outlay. The practice followed prior to the institution of the depreciation fund was based on the principle of charging to revenue the entire cost of replacing an asset by a like asset. It was promulgated in the Secretary of State's Despatch, No. 17, so long ago as 9 March 1864 in the following terms :

'(*a*) There can be no doubt that the expenses of an additional length of railway, of the doubling of an existing line, of the original construction of any work including that of those intended to be only temporary, as well as of all additions to existing works, ought to be charged to the capital account.

'(*b*) When new lines form a junction with an existing railway, the expense of the junction and all its concomitant appliances of stations, sidings, signals, etc., is properly chargeable to capital account, and the cost should be divided in such proportion as may be fair between the two railways for whose mutual and joint benefit the junction is made.

'(*c*) The cost of additional stations and of any important building not previously contemplated, which is added to an existing station should be charged to capital account.

'(*d*) The cost of maintaining in a proper condition the works when completed must be charged to the revenue account, but if any extraordinary

casualty should occur, such as the destruction of a bridge by flood, the case must be regarded as exceptional, and the cost of construction or replacement must be charged to capital or revenue, or divided between them, as may be deemed proper, according to the circumstances of the case.

'(e) In relaying rails, if the original rails have proved too light and additional strength in weight of iron or steel be required, the capital account should bear the difference between the cost of the new and improved rails and that of replacing the old rails by rails of similar character, revenue being chargeable for relaying and all other expenses. The same principle should be applied to replacing by iron sleepers those of wood originally laid down.

'(f) In the locomotive stock, capital ought to bear the first expense of any addition which may be made to the existing stock and of any important improvement or alteration which may be made in the same, as well as of machinery which is absolutely new, and not merely in replacement of old : but all repairs and less important alterations of the existing stock of engines, carriages or wagons already paid for and handed over for working purposes should be charged to revenue. The rolling-stock and plant, after being once paid for from capital, must be kept by revenue to its full complement.

'(g) In no case should the cost of mere appurtenances of stock, after the opening of a line, or of a charge such as the substitution of one mode of lighting for another, whether in engines, carriages, stations, signal lamps, the cost of which has already been paid for out of capital, be admitted as capital expenditure. These properly belong to the traffic revenue account.'[9]

These principles as applied in practice implied that, broadly speaking, revenue should pay for the cost of replacing and renewing property to the same standard of efficiency as before. Only genuine improvements should be charged to capital.

PROCEDURE ON COMPANY-MANAGED RAILWAYS

The procedure on the company-managed railways till their acquisition was regulated on these lines. According to the rules governing the accounts of the company-managed railways,

I. Capital bears

(i) the cost of the first construction and equipment of the line;

(ii) the cost of maintaining a section of the line not opened for traffic;

[9] Quoted in *An Introduction to Indian Government Accounts and Audit*, 1930, pp. 267-8.

(*iii*) the cost of new works, of additions to rolling-stock, plant and machinery, when estimated to cost more than the new minor works limit ;

(*iv*) such portion of the cost of the renewal, replacement or substitution of an existing work as may be attributable to a permanent addition or substantial improvement in its character and object, provided there shall be no charge to capital, unless the cost of renewal, replacement or substitution be in excess of the original cost of the work by more than the new minor works limit ;

(*v*) charges for land taken up permanently, whether required for capital or revenue works.

II. Revenue bears

(*i*) all charges for maintaining and working the line open for traffic ;

(*ii*) the cost of purely temporary or experimental work of the open line ;

(*iii*) the cost of minor additions or improvement involving an expenditure within the new minor works limit ;

(*iv*) the cost of renewal, replacement or substitution of an asset, which does not involve a permanent addition or substantial improvement in the character and object of the original asset ;

(*v*) such portion of the cost of replacing a work by another involving a permanent or substantial improvement as may not be chargeable to capital according to I (*iv*) above ;

(*vi*) dismantling charges, and all charges on account of freight on material from depot to site and loading and unloading charges except in connexion with works chargeable wholly to capital.[10]

That a really conservative attitude had been adopted is clear from these rules. Thus, if light rails and points and crossings are replaced by heavier rails, points and crossings, capital will be charged with a portion of the cost of the new materials proportionate to the excess weight by which the new rails, etc., exceed the old rails, etc. If old girders are replaced by new and heavier ones capital should be charged only with that portion of the cost of the new material which is proportionate to the excess weight of the new over the old girders. Similarly as regards locomotives, tenders, goods stock

[10] *Railway Accounts Code*, Vol. 1, 1932, pp. 38-9.

and coaching stock, certain formulae were elaborated to ascertain the extent of the improvement.[11]

The increased cost of replacing an asset by a like asset during a period of higher prices would under these rules be charged to revenue or working expenditure. In this respect the depreciation fund rules marked an important departure. As the cost of replacing an article could never be known at the time it was purchased, it was considered impracticable to adopt the principle of replacement value. It was, therefore, decided to accept the recommendation of the Acworth Committee, and what is taken as the ordinary commercial practice, of basing the contribution on the original cost of the asset. That this results at a time of higher prices in an increased debit to capital was recognized. As the Railway Board themselves stated :

> 'It has been estimated that the application of these principles in the year 1921-2 would have resulted in the transfer of approximately Rs. 3 crores from revenue to capital charges on all budget (State-owned) railways, but . . . we propose to confine these proposals to State railways on which the

[11] Thus in regard to replacement by locomotives of increased tractive power, the formula was :

Tractive power—D = Diameter of cylinder in inches.
P = Mean pressure of steam in cylinders in lbs. per sq. inch taken at 85 per cent of the maximum boiler pressure for superheated engines and 75 per cent of the maximum boiler pressure for saturated engines.
L = Length of stroke in inches.
W = Diameter of driving wheel in inches.
T = Tractive force on rails in lbs.

$$= \frac{D^2PL}{W}$$

If T_1 = Tractive force of the old locomotive and T_2 = Tractive force of the new locomotive, the proportion chargeable to capital will be

× cost of new locomotive.

In regard to goods stock, if C_1 is the carrying capacity of the old stock and C_2 the carrying capacity of the new, the proportion chargeable to capital will be

$$\frac{C_2 - C_1}{C_2} \times \text{cost of new stock.}$$

As regards coaching stock, the floor area is taken as the principal factor.
If A = Cost of new stock (exclusive of improved appliances, *viz.*, gas and electric lighting, vacuum brakes, and intercommunication apparatus),
B = Cost of improved appliances as above, less cost of appliances put out of use,
X = Floor area of condemned stock,
Y = Floor area of new stock,

the proportion chargeable to capital is $A \times \frac{Y-X}{Y} + B$.

additional debit to capital would have been less than Rs. 1 crore. Against this, however, there will be a reduction in the charges which under the present rules go against capital.... The cost of replacement of other than complete units would go entirely against revenue and would not be distributed between revenue and capital. Further, any increase in capital charges will be counterbalanced in time by the provision for writing down of capital when articles are replaced at a lesser cost than the original and when works are entirely abandoned.'[12]

TABLE 85. APPROPRIATIONS TO AND FROM THE DEPRECIATION FUND*

(STATE-OWNED RAILWAYS)

(In crores of rupees)

Year	Appropriation to the fund	Withdrawals	Net accretion	Nominal closing balance	Temporary loans	Actual closing balance
1924-5	10·35	7·29	3·06	3·06	..	3·06
1925-6	10·67	7·99	2·68	5·74	..	5·74
1926-7	10·89	8·05	2·84	8·58	..	8·58
1927-8	11·38	10·95	0·43	9·01	..	9·01
1928-9	12·00	9·60	2·40	11·41	..	11·41
1929-30	12·59	11·76	0·83	12·24	..	12·24
1930-1	13·07	11·39	1·68	13·92	..	13·92
1931-2	13·46	8·26	5·20	19·12	4·25	14·87
1932-3	13·77	6·35	7·42	26·54	10·23	12·06
1933-4	13·56	8·07	5·49	32·03	7·96	9·59
1934-5	13·72	8·66	5·06	37·09	5·06	9·59
1935-6†	13·26	9·16	4·10	41·19	4·00	9·69
1936-7	13·17	7·88	5·29	46·48	−1·21	16·19
1937-8‡	12·59	7·69§	4·90	49·90‖	..	19·61‖
1938-9	12·56	7·08	5·48	55·38	..	25·09
1939-40	12·59	6·53	6·06	61·44	..	31·15
1940-1	12·64	7·19	5·45	66·89	..	36·60
1941-2	12·68	5·35	7·33	74·22	−7·91	51·84
1942-3	12·80	4·95	7·85	82·07	−22·38	82·07

* Figures taken from *Explanatory Memorandum to Railway Budget.*
† Under new rules.
‡ The figures of the Burma Railways excluded from this year.
§ Including Rs. 37 lakhs written off capital on account of abandoned assets.
‖ Excludes Rs. 148 lakhs balance for the Burma railways.

The annual appropriations to and from the depreciation fund on State-owned railways during the period 1924-43 are given in Table 85. During the first seven years, the withdrawals amounted to a large proportion of the appropriations to the fund, and the net accretions during each year amounted to about Rs. 3

[12] *Financial Commissioner's Review* 1934-5, p. 46.

crores and less. From 1931-2 onwards, the appropriations from the fund towards renewals and replacements were kept down to such an extent that the net accretion increased to Rs. 5 crores and more. The effect of underspending is shown by the fact that the nominal closing balance of 1930-1 almost doubled in two years and approached treble the figure of 1929-30 in four years. The actual balances were, however, much less, since, with effect from 1931-2, after the depletion of the reserve fund, large amounts were withdrawn from the depreciation fund to finance the deficits.

MINUS BALANCES

Within a few years of the inception of the depreciation fund arose a situation which called attention to the limitations of the system. In making withdrawals from the fund for the renewal of assets, no allowance, as already stated, was made for the life already expired before the fund was created. As a result of this the arrears of depreciation had to be covered by the ordinary contributions. The appropriations to and from the fund during 1924-30, shown in Table 86, revealed that the fund was overdrawn on two railways, the M.&S.M. and S.I. Apart from this, the fund was overdrawn under certain

TABLE 86. DEPRECIATION FUND TRANSACTIONS
APPROPRIATIONS TO AND FROM THE FUND DURING 1924-30*

(STATE-OWNED RAILWAYS)

(In lakhs of rupees)

Railways	To	From	Balance
Burma	2,67·92	2,26·95	40·97
E.B.	4,74·56	3,03·61	1,70·95
E.I.	12,36·34	9,72·40	2,63·94
G.I.P.	9,40·20	8,86·80	53·40
N.W.	13,78·37	9,90·60	3,87·77
B.N.	6,85·14	5,38·84	1,46·30
B.B.&C.I.	7,19·45	5,66·43	1,53·02
M.&S.M.	4,85·53	4,97·29	− 11·76
S.I.	3,21·91	3,33·46	− 11·55

Railway Audit Report 1929-30, p. 80.

assets also. As the appropriations to the fund were made on the basis of the different classes of wasting assets, the withdrawals from the fund to meet the cost of the renewals of certain assets whose life had been exhausted were greater than the appropriations to the fund itself on their account. Although a net debit balance was shown, as may be seen from the figures summarized above, against only two railways, other railways were also affected under particular assets. The most important of such cases was presented by the permanent way. The details presented in Table 87 show the appropriations to and from the fund under this asset. Throughout the period—1924-35—the provision under this head was overdrawn. Not only was this the position in the aggregate, *minus* balances occurred on most of the railways.

TABLE 87. DEPRECIATION FUND TRANSACTIONS UNDER PERMANENT WAY*

(*In lakhs of rupees*)

Year	Appropriations to the fund	Appropriations from the fund	Total balance
1924-5	1,87·60	3,04·82	−1,17·22
1925-6	3,23·12	4,09·29	−2,03·39
1926-7	3,38·40	4,23·91	−2,88·90
1927-8	3,51·73	6,47·45	−5,84·62
1928-9	3,78·12	4,66·51	−6,73·01
1929-30	3,98·87	4,82·65	−7,56.79
1930-1	4,31·84	4,41·33	−7,66·28
1931-2	4,48·77	4,48·08	−8,23·28
1932-3	4,59·29	4,66·16	−8,30·15 (8,64·03)
1933-4	4,76·80	3,04·75	−6,91·98
1934-5	4,89·46	3,74·45	−5,76·97

*These figures, from 1924-31, are taken from the *Railway Audit Report* 1930-1, p. 98. The figures for the subsequent years are taken from the *Appropriation Accounts* for each year. There is a difference in the closing balance stated in the *Railway Audit Report* and the opening balance in the *Appropriation Accounts for* 1931-2 which is Rs. 8,23·97 lakhs. The figures for 1933-4 and subsequent years include the Strategic railways also. The closing balance including the figure for the Strategic railways for 1932-3 is given within brackets.

One reason for this was supposed to have been the existence of considerable arrears of depreciation which might have had greater effect in the case of this asset than in the case of others. This cannot, however, be an adequate explanation as the appropriations to the fund were steadily increasing whereas

the *minus* balances were increasing at a much higher rate. The principal factor will be found in the capital program since the Separation Convention, which provided for a large number of schemes and main line renewals. In the course of the renewals program, heavier rails were substituted for lighter ones, which were employed in branch line construction or renewals.[13] It would, therefore, appear that the rates of depreciation for assets under this head were inadequate.

TABLE 88. DEPRECIATION FUND BALANCES AGAINST CERTAIN ASSETS 1924-31

(STATE-OWNED RAILWAYS)

(*In lakhs of rupees*)

Class of Asset	Appropriation to the fund	Appropriation from the fund	Total balance
Permanent way	24,09·68	31,75·96	−7,66·28
Station machinery	3,13·56	1,23·37	1,90·19
Plant	5,14·04	1,03·33	4,10·71
Carriage and wagon	19,26·32	10,18·36	9,07·96

* Complied from figures taken from *Railway Audit Report* 1930-1, pp. 98-101.

The argument for premature renewals also emphasises the fact that the existing procedure omitted to take into account the element of obsolescence, the need for heavier track, engines and the like.[14] The position as regards the other assets is, however, different. Station machinery and plant, for example, indicated that the appropriations from the fund from year to year formed a low and exiguous proportion of the contribution to it and the final balances were in one case eight times,

[13] The Director of Railway Audit remarked : 'How far these causes would serve to explain the *minus* balances under "permanent way" would have to be a matter of very detailed and expert enquiry. In one way, the methods of allocation tend to present the facts in the most unfavourable light. The premature replacements carried out during the past years have resulted in the release of a large amount of material of considerable value which has . . . been utilized in branch line construction. Under the rules of allocation, the credit for this material goes to revenue and not to depreciation fund, revenue making up the full original cost of the asset in the depreciation fund over the term of life of the asset. Were the credits for the materials released by permanent way renewals within the past few years adjusted against the *minus* balance in the depreciation fund, this would doubtless be very much reduced, and it is doubtful whether in the circumstances existing since the separation of railway finance from general revenues, the rule at present followed has been sound financial policy, resulting as it does in large credits to revenue and a diminished depreciation fund balance.'—*Railway Audit Report* 1930-1, p. 96.

[14] *Railway Audit Report* 1932-3, para 104, p. 34.

and in another more than twenty times the highest expenditure of any one year from the fund. The credit balances under carriages and wagons more than made up for the *minus* balances recorded under permanent way, and this might suggest either a low estimate of life or underspending. The matter was consequently a subject for expert enquiry since the same results may be produced by the expiry of life of the assets according to the rules, though the assets might be fit for service for some time longer.[15]

Dickinson's Enquiry

Within two years of the introduction of depreciation accounting, the entire system was examined in all its bearings by Sir Arthur Lowes Dickinson, who was appointed to enquire into the system of accounting, audit and statistics on Indian railways.[16] There were some at the time who maintained the view that inasmuch as the whole of the railway revenues, either directly or indirectly, accrue to the benefit of Government or of the travelling public by way of improved services or lower rates, and all additional capital is provided by Government, it is immaterial which method of depreciation accounting

[15] 'But anything in the nature of dogmatic assertion,' stated the Director of Railway Audit, 'is probably more dangerous here than anywhere else. The life of a coach or wagon is not necessarily expired when the full original cost has been contributed by revenue to the depreciation fund. The coach or the wagon may even after that date be fit for service on the line, and it would not be economical financial policy to scrap a serviceable vehicle, merely because it has lived its life according to depreciation fund rules. If the vehicle is replaced before it is scrapped or broken up, the replacement is from the practical point of view a premature one. Actually, it is the case that many vehicles are running on the line after vehicles which . . . built in replacement of them have been placed on the line as well. Thus, replacement of a coach or a wagon from the practical point of view can only be considered as in arrears when the coach or wagon has been condemned and broken up and when nothing has been placed on the line in its stead. It is, therefore, dangerous to argue from the depreciation fund balances that replacements are largely in arrears. Undoubtedly, on a number of railways, arrears of replacements do actually exist. But the condition of traffic and general financial stringency renders it unprofitable at the present moment to carry out these replacements. It is impossible for the non-expert to state categorically that the lives of coaches and wagons have been underestimated. All that can be said is that the balances against this class afford some grounds for such an inference.... Probably, the only conclusion that can be drawn with any degree of certainty in respect of this particular portion of the depreciation fund is that when traffic revives there will be a considerable drain on the fund against this asset, and it may be that only after these events have occurred will it be possible to form any correct conclusion regarding the accuracy of the estimated life and whether the balances are adequate or excessive.'—*Railway Audit Report* 1930-1, para 219, pp. 96-7.

[16] *Report by Sir Arthur Lowes Dickinson on the System of Accounting, Audit, and Statistics of the Railways owned and managed by the Government of India,* 1926-7, hereinafter referred to as *Dickinson's Report.*

—original cost or replacement cost—should be adopted. Dickinson gave no encouragement to these theorists and he emphasised the importance of proper depreciation accounting in the following terms :

> 'the importance of sound accounting principles cannot be overlooked. Expediency should not be allowed to override the principle ; there is much to be said for the view that the railway property should be handed on from year to year intact, *i.e.*, properly maintained in its original state, and the cost of this met out of earnings before net earnings are employed for any other purpose.'[17]

Examining the relative merits of the replacement and the original cost principles for Indian railways, Dickinson observed :

> 'In such a large country with a dense population, great distances, with a relatively small milage of railways, and low rates, both for passenger and goods traffic, there is need for considerable railway extension which can perhaps be best carried out at first by a lower standard of construction to be improved gradually as the traffic increases. Under such conditions a most conservative accounting policy should be adopted and considerable sums should be set aside each year to meet improvements and betterments in addition to providing for the replacement of units by units of similar capacity as occasion requires. One important step towards such a policy is to charge all additional costs of renewal and replacement due to higher costs to revenue instead of to capital ; and a second equally important one is to charge also to revenue any such additional costs as may be due to the necessity of maintaining the property in the highest state of efficiency required for modern conditions, but which may not correspondingly increase either traffic or earnings.'[18]

Dickinson found that in fixing the scales of the depreciation rates for each different class or structure and equipment, sufficient account was probably not taken of the factor of obsolescence.[19] In some cases the estimated lives had been greater than would be justified. He, therefore, proposed that 'no class of railroad property should be estimated to have

[17] *Dickinson's Report*, Part I, para 278, p. 68.

[18] Ibid., para 285, p. 69. The second step was met by the terms of the convention which provided for a reserve fund, but as the use of the surplus is restricted, Dickinson considered it desirable 'to make higher charges to revenue (which would reduce surplus) and to permit of the use of surplus for betterments as well as new construction.'

[19] Ibid., para 279, p. 68. Dickinson said : 'The railways of India have mostly been in existence less than 60 years and in other countries less than 80, and during that period the changes in methods and consequent obsolescence have been great.'

a life of more than 50 years, and that in the case of electrical equipment this should be reduced to a maximum of 25 years.'[20]

A more conservative attitude was thus taken by Dickinson towards the provision for renewals and replacements and this is maintained throughout in his report. The real commercial reason for providing depreciation is more important than the particular method adopted, he stated, because it

> 'provides a fund to meet any changes and reconstruction required to meet obsolescence, and enables a property to be maintained continuously in the highest state of efficiency without too great a strain upon the revenue resources of short periods. For this reason alone, the most conservative methods of providing for depreciation should be adopted.'[21]

His recommendations were, therefore, framed in this spirit. Besides proposing a return to the principle of meeting in full the replacement costs from revenue, Dickinson recommended an increased provision for obsolescence and betterments. Only the cost of excess capacity enabling increased revenue to be earned should be charged to the capital account.

No action was taken on these recommendations as they were to be examined by a committee of the Central Legislature, appointed in September 1928, to consider the revision of the convention. Meanwhile as the Assembly elections came in, the committee became *functus officio* on the dissolution of the Assembly and the Railway Member announced the postponement of the review of the working of the arrangements till the Indian constitutional issue was decided. Thus the problems were left undecided for an indefinite period.

The abnormal deterioration in railway finance with the beginning of the depression in 1931 led to an enquiry into all aspects of railway working and discussions in connexion therewith gave a new turn to the attitude towards depreciation accounting. The Railway Retrenchment Sub-Committee, on

[20] Ibid., para 280, p. 68. Dickinson stated : 'The age of electricity lies closely ahead and changes in electrical methods appear to come rapidly. In fact, it is not many years since leading electrical experts in the United States would not give any electrical apparatus a life of more than 10 to 15 years. There would seem to be reason to think that in less than 50 years entirely different methods of transportation may be evolved which may render existing railways and their equipment to a large extent obsolete.'

[21] Ibid., para 281, p. 68.

an examination of the annual appropriations to, and from, the fund during 1924-32, found that in no year had payments fallen short of withdrawals and that the surplus, already large, was likely to be larger. On these grounds they said that it is 'arguable that the payments to the depreciation fund are higher than necessary and that the assumed lives of the asset on which the contribution is based have been pitched too low.' The Posts and Telegraphs Accounts Committee, who had sometime previously examined the question in connexion with that department, found that the charge of underestimation of lives was well founded and proposed a revision of the lives and a reduction of the contribution to their depreciation fund. But the Retrenchment Sub-Committee were not prepared to recommend that course and proposed instead that the existing arrangements should not be disturbed until a special enquiry, to be instituted by experts, had gone into the estimated lives of railway assets. They concluded :

> 'We cannot overlook the fact that the contributions do not take into account obsolescence and that they aim at providing at the end of the assumed life only the original value of the asset and not the actual cost of replacement. We are convinced that, under any sound system of accounting, it is essential that proper provision should be made for depreciation of the property before arriving at the net receipts from working '[22]

OVERCAPITALIZATION AND OTHER CRITICISMS

In 1932, the Director of Railway Audit drew attention in his report to certain unwelcome features which had resulted from the operation of the depreciation fund rules. He stated that there was a tendency towards overcapitalization under the depreciation accounting system and that 'the growth of railway capital under a system by which all differences between replacement cost and original cost and all betterments are charged to capital, while the increasing total of the capital account is not checked through any scheme of amortization, would seem to render advisable an early re-examination of the Separation Convention.'[23]

[22] *Railway Retrenchment Sub-Committee Report*, para 19, p. 6.
[23] *Railway Audit Report*, 1930 1, p. 94.

The Auditor-General in his comments on the Director's report impressed on Government the necessity to come to a decision as he found justification for believing that the existing rules led to 'considerable inflation of the capital accounts'. 'If the future financial position of railways is not to be prejudiced,' he added, 'it is necessary to ascertain the truth in connexion with this matter and to take necessary measures for the future.' Further, railway legislation would have to define the financial principles of railway administration which called for a great deal of research work before a decision on complicated financial and accounting problems could be reached. He also doubted whether 'these (depreciation) accounts sufficiently represent realities' for it was suggested to him that 'it is questionable whether the maintenance of elaborate accounts in the present form really serves any essential purpose and that it would be more economical and might be as effective to maintain a general renewals fund built up by percentage contributions on the capital at charge.'[24]

In February 1933 the Railway Member referred in detail in his speech introducing the Railway Budget in the Assembly to these criticisms and indicated that a thorough investigation of the questions involved was being undertaken. In the budget speech in the following year it was announced that the subject was reserved for discussion concurrently with the important financial questions connected with the contemplated changes in the administration of Indian railways. The delay in dealing with the depreciation problem was commented upon by the Public Accounts Committee of the Central Legislature and others.[25]

The main issues raised by the discussions on the principles and procedure connected with the depreciation accounting system of 1924 may be summarized briefly thus.

(*a*) Contributions to the fund were excessive.

(*b*) Assumed lives were too low.

[24] Letter from the Auditor-General in India to the Secretary to the Government of India, Finance Department, No. T.654, Rep./732, dated 28 June 1932, para 9, (b), (c).—*Public Accounts Committee Reports*, 1930-1, Vol. I, Part II, pp. 53-4.

[25] *Public Accounts Committee Reports* 1932-3 and 1933-4, Vol. I, Part II.

(c) Allocation of expenditure between capital and revenue was unsound and led to overcapitalization and therefore required revision.

(d) Provision made under the rules was not adequate.

(e) No provision for amortization was made.

(f) Existing system led to records which were inaccurate and unsatisfactory.

We may now proceed to discuss each of these contentions.

(a) *Contributions excessive ?*

The criticism that contributions to the fund were excessive is easily met.[26] The high balances in the fund from 1930 onwards do not imply that the appropriations were based on an extravagant scale. Firstly, the fact that no provision was made for arrears of depreciation at the inception of the fund—which were estimated at nearly Rs. 20 crores in 1922 —is enough to show that the balances in the fund have been necessarily below the value of the expired life of the present assets. Secondly, the balances themselves form only a small percentage of the total capital at charge.[27] Thirdly, the contributions are based on assets which are now in existence, whereas withdrawals are proportionate to the assets in existence years ago, which are falling due for replacement or renewal now. In a rapidly expanding industry like the Indian railways, the contributions must necessarily be in excess of withdrawals. Fourthly, the capital at charge increased by Rs. 170 crores during the period 1923-32 and appropriations to the fund had to be increased by Rs. 3·42 crores. The newly created assets added by this expenditure may not require any expenditure from the fund for a long time to come. Fifthly,

[26] This point has been ably discussed by Sir P. R. Rau in his *Financial Commissioner's Review* 1932-3, pp. 3-6.

[27] The percentage for the years prior to 1931 varied from 1·3 in 1927-8 to 1·8 in 1930-1. There was an increase during the succeeding years largely due to comparatively low expenditure as a result of financial stringency. The average increase during the first seven years was only at the rate of Rs. 2 crores a year ; during the next three years it rose to Rs. 6 crores a year. On the whole this does not appear to be excessive as shown by the balances of the four British railways which amounted to about 4 per cent of their capital. For further details, see Rau's *Review* op. cit., and K. V. Iyer, *Railway Accounts and Finance*, 1933, Vol. I, pp. 95-9.

assets renewed during the last decade were purchased at inflated prices and contributions are based on the standard of those prices. But the assets whose lives had expired were acquired at lower prices and under the rules only the original cost is debited to the fund, thus making the withdrawals exceptionally low. With a decline in prices the situation will be reversed and the withdrawals are likely to exceed the rate of contributions. Sixthly, certain items, strictly to be charged to the fund, escape under the depreciation rules of 1924. Since the rules provide only for the renewal or replacement of whole units the cost of partial renewals are charged to revenue, 'Repairs and maintenance'. As Dickinson rightly pointed out, an asset may be renewed partially and kept up many times during its life. The effect of this is naturally to keep down the appropriations from the fund.[28]

The effect of these tendencies were to some extent compensated by two factors which pulled in opposite directions. The first is that the railways had a comparatively ambitious program of works (including renewals) in the years immediately following the institution of the fund. In more recent years, the program of renewals suffered considerable reduction but the scrapping of assets—particularly rolling-stock—without replacement resulted in large withdrawals from the fund. The second is the effect of premature renewals, specially of the permanent way, already referred to.[29]

(b) *Assumed lives too low ?*

The question whether the assumed life of the assets was pitched too low cannot be answered readily. The life of an

[28] The Wedgwood Committee supporting this view said : 'The nominal balance of the fund has grown year by year. It has been suggested to us . . . that this is evidence that the contributions made have been unduly high. We think this contention is mistaken. The depreciation fund, set up at a period when the life of the assets to be covered had already in part expired, is necessarily an immature fund, and it is an inevitable characteristic of such a fund that the contributions for many years must exceed the outgoings if the fund is ultimately to establish itself as reasonably sound. This circumstance therefore affords no presumption that the contributions are unduly generous.' *Wedgwood Committee Report*, para 208, pp. 125-6.

[29] *Financial Commissioner's Review*, op. cit. The Financial Commissioner, Railways, observed that 'under a mistaken interpretation of the rules, the original cost of the asset renewed was in all such cases debited to the fund even when the asset had not been disposed of, but merely transferred elsewhere ; for instance, when a length of permanent way was removed from its original position and relaid elsewhere on the line.'

asset depends on the actual wear and tear in operation, the climatic conditions, the degree of progress in technique, and the conditions of railway working and transport. But comparison with the standards adopted by foreign railways shows on the whole that the life on Indian railways has not been underestimated. Taking the figures adopted by the L.N.E.R. and the South African Railways, the comparison of certain items with the Indian scales stands as follows :

Indian railways	Life years	L.N.E.R.[30]	Life years	South African railways	Life[31] years
Permanent way—rails and fastenings, including points and crossings	60	Permanent way	21¼	Permanent way : track	30
				Rails and fastenings	33⅓
				Sleepers and fastenings	21
Sleepers, wood,	15				
,, cast-iron and ferro-concrete	40				
,, steel trough	30				
Locomotives engines and tenders	35	Locomotives (steam)	33⅓	Locomotives, steam and electric	33⅓ 33⅓
Boilers	25	Carriages	30	Coaches and electric motor coaches	33⅓
Coaching vehicles	30				
Goods vehicles	40	Wagons	30	Wagons	33⅓
Electric instruments and telephones	13	Electrical equipment	20	Telegraphs and telephones : poles, wires, etc.	30
Plant	20	Workshop machinery and plant	25	Instruments	10
Motor vehicles, road	10	Road motor vehicles	5	Machinery	20

It should be clear from these figures that the charge of a lower scale of life values is not sustained, and that the Depreciation Fund Committee's estimates on the basis of the past experience on Indian railways compare very favourably with those in other countries.

(c) *Allocation unsound ?*

The principles of allocation of expenditure between capital and revenue and Dickinson's criticisms have already been referred to. Sound and prudent finance has always been in favour of meeting the full costs of replacing an asset by a like asset from revenue. The Railway Rates Tribunal and the British railways have taken this view. On Indian railways, as we have seen, this was the practice until 1924 and this continued to be the practice on company-managed railways.

[30] C. H. Newton, *Railway Accounts*, 1930.
[31] *South African Transport Conference*, 1936, pp. 169-70.

On state-managed railways, with the institution of the depreciation fund, the principle adopted has been to charge only the original cost of the asset to the fund and the increase attributable to improvement and higher prices to capital. Over a long period of ups and downs in the price level there may not be much to choose between the two methods. The undesirable effects are seen particularly during a period of higher prices, when the replacement of assets involves a charge to capital which would, under the more conservative principle, be borne by revenue. Thus, according to the calculation made in 1929, owing to the change towards the original-cost basis of depreciation accounting in 1924, the higher charge to capital on account of the heavy renewals program during the post-separation period was over Rs. 2 crores per annum on all state-managed railways taken together. During a period of attenuated program the amount will of course be less, such as during 1936-7 when the amount was stated to be Rs. 82 lakhs.[32] The older method has received support again and the Financial Commissioner, Railways, outlining his proposals for placing depreciation accounting on a proper basis stated that it was 'certainly desirable to alter the rules so as to avoid the debit to capital of any charge where there is no improvement.' But the question might be raised whether it was correct to charge to the fund anything in excess of the original cost—if the replacement cost was higher—as the contributions to the fund were based on original cost. As the Financial Commissioner observed, 'Obviously the contributions to the fund cannot be based on the replacement cost of an asset for it is impossible for any one to foresee the level of prices that may exist when the asset is due to be replaced.' On the other hand it was desirable to have a system in which the allocation would be confined to capital and depreciation fund, without bringing in revenue into the transaction. 'The simplest rule,' he concluded, 'is, therefore, to charge to the depreciation fund the cost of replacement by a like asset and to capital the balance.

[32] *Financial Commissioner's Review* 1934-5, p. 50.

When, however, the cost of replacement by a like asset is less than the original cost, the latter should be charged to the depreciation fund.'[33]

The effect of the adoption of this proposal in a normal year is to reduce the expenditure debitable to capital by about Rs. 1·5 crores and increase *pro tanto* the expenditure debitable to the depreciation fund. During the depression period, with the reduced tempo of railway works programs, the amount, of course, was smaller—less than a crore.

That the original cost basis of depreciation accounting brought into operation tendencies towards over-capitalization, as pointed out by the Director of Railway Audit, the Auditor-General and the Public Accounts Committee, was admitted by the Financial Commissioner, Railways, and he proposed a reversion to the replacement cost basis.

(d) *Depreciation provision not adequate ?*

Another criticism which took up quite an opposite position to the one already discussed was that the provision being made under the rules was not adequate. Dickinson pointed out that no allowance was made for betterments, 'improvements in service, but not producing any revenue', which should be a charge against the net income of the year. On conservative financial principles, capital should not bear the cost of improvements which are neither revenue-earning nor expense-saving. But in actual practice the segregation is in some cases difficult. It may be argued that the cost of safety appliances and measures may not be brought under this group. The large amount of expenditure which was incurred on the Hardinge Bridge protection works, for instance, was necessary both as a safety-measure in connexion with the bridge and for securing the integrity of a revenue earning asset, and was to save indirectly larger expenditure on its replacement at a future date. The cost of providing amenities for passengers may not bring an immediate return. Its revenue-earning

[33] *Financial Commissioner's Review* 1934-5, pp. 50-1.

aspect may only be indirect and somewhat remote. These instances indicate the practical difficulties in deciding allocation on distinctions based on the effect on earnings only.

That current revenues should bear the cost of minor improvements and additions has long been recognized on Indian railways and this has been met by the minor works provision. According to this, when the cost in each case does not exceed a prescribed limit—Rs. 2,000 at the time, now raised to Rs. 10,000—it should be charged to revenue. But the purpose of this provision was often frustrated by the adoption of a principle of grouping by which a number of similar minor works are taken as one unit for the purpose of deciding whether expenditure should be met from borrowed funds or current revenues.

The practice of certain foreign railway systems suggests the desirability of providing for betterments. On British railways, according to the regulations made by the Ministry of Transport in pursuance of Section 77 of the Railways Act, 1921, the principle of meeting the cost of 'betterments and minor additions' from current revenues is recognized and limited to cases where the cost of a single unit does not exceed £250 and where the value of the improvement does not exceed £500. On the South African railways the necessity for meeting the cost of betterments has been met by a definite provision of 1/6th per cent of capital from revenue each year.

The factor of obsolescence has already been referred to. No provision was made on this account, and the need to provide for it was not appreciated. The effect of obsolescence on American railways, even thirty years ago, was thus quoted by Ripley from the observations of a leading efficiency engineer :

'Roadbeds do not wear out any more, they are realigned with grade revisions ; ties do not gradually decay, they are cut to pieces by the heavy traffic ; rails do not last their life, they are displaced by heavier sections ; stations do not wear out, they have to be torn down to make way for palatial structures ; round-houses are scrapped because electrical equipment has come in ; locomotives used to last fifty years, the average age of locomotives

in actual freight service now is not over ten years; wooden passenger cars make way for steel cars. A two-per cent assessment made once used to be sufficient for depreciation. It is a question whether three per cent a year will take care of modern obsolescence.'[34]

The pace of progress has not slowed down and it will be financial prudence to make allowance for the factor of obsolescence. That the depreciation fund under the 1924 rules did not allow for this is clear.

(e) *Provision for amortization*

The desirability of adopting some arrangement for a gradual amortization of railway capital has been discussed in connexion with the problems of depreciation accounting. As the system tended towards over-capitalization, proposals were made to counteract it and to compensate for the damage that had already been done. The estimate up to the end of March 1936, indicated that the capital account had been overcharged to the extent of Rs. 20 crores. The Public Accounts Committee in their report for 1933-4 commented on the problem as follows :

'Ideally, the depreciation fund, ought to be turned into a reserve for renewals and minor improvements and a definite provision for amortization should be made out of revenue. The former would involve an increased allocation of something like Rs. 2 crores a year to cover expenditure which is at present being wrongly charged to capital, while the latter ought to be something like Rs. 5 crores a year.'[35]

The amount of Rs. 5 crores was probably based on the opinion of the Percy Committee to the effect that the railways should pay a contribution of about that amount to Federal revenues for amortization of capital or as remuneration to the Central Government.

The amortization of the railway debt, amounting to over Rs. 800 crores, is out of the question. It has been considered by Ripley that 'amortization, so far as the actual principal of the debt is concerned, is not essential to sound finance. The same

[34] William Z. Ripley, *Railroads : Finance and Organization*, p. 234-5n.
[35] *Public Accounts Committee Report* 1933-4, Vol. I, para 9, p. 5.

object may in large measure be attained by regularly setting aside adequate sums for depreciation, even at the expense of dividends. The main point is that the debt, being practically perpetual through refunding, the assets should not be permitted to diminish in value.'[36]

But there are certain elements in the capital account of the Indian railways which should not be overlooked. Apart from over-capitalization to the extent of Rs. 20 crores since 1924, certain transactions of the past have had the same effect. Thus the capital accounts of certain railways were inflated by the practice of the Government of India buying up their properties from the original companies on the basis of recent earning capacity. This has resulted in the payment of large premia over and above the actual costs of construction, equipment and development. The difference in the price paid for the railways comprised in the present State-owned railways is, according to the figures for 1935-6, £33,885,943 for the main lines and £724,213 and Rs. 2,19,09,151 for the branch lines. They were distributed over the principal lines as follows :

Railway	Premium	
	£ million =	Rs. crores
B.B.&C.I.	5·6	7·5
E.I.	6·5	8·7
O.&R.	1·0	1·4
E.B.	1·1	1·5
G.I.P.	14·8	19·7
M.&S.M.	2·6	3·4
S.I.	0·1	1·3
	Total	43·5

The sum of Rs. 43·5 crores may be regarded as being in the nature of goodwill, at any rate in comparison with the status of some of the other assets of the railways.[37]

There are other similar items, such as loss by exchange, amounting to Rs. 8·42 crores[38] and expenditure incurred on

[36] Ripley, op. cit., p. 131.
[37] *Railway Audit Report* 1931-2, p. 40.
[38] The loss by exchange represents the difference between the actual rupee equivalent of sterling payments and the equivalent converted according to the standard rate of exchange adopted by Government.

railway collieries and other assets not in use, amounting to Rs. 1·60 crores. Interest during construction and loss in working amount to Rs. 2·13 crores and Rs. 2·72 lakhs. The former is permissible, but the latter should have been written off from the profits of later years.[39] From these instances it may be questioned whether, in view of the fact that there are no tangible assets against these figures, they should not be written off over a series of years. The mischief does not end with the mere inflation of the capital account; interest charges and contribution to the general revenues have to be paid on that capital.

The question of the premia paid is, however, a debatable one. From the point of view of fidelity of accounting, the practice of treating the price paid for the property as the capital outlay has the merit of stating the transaction as it had taken place.[40] It is in accord with current business practice, and must be beyond cavil. Even so, the surplus is an intangible element representing the 'present value of expected super-profits'. Goodwill or reputation in trade, as Ripley states, is a characteristic asset of competitive business and as such has only a remote connexion with railways under present conditions. 'With but a single carrier in the field, the shipper has no choice and no goodwill either to give or to withhold.'[41] Consequently, it has been argued that the valuation of a railway should not allow for this factor at all. Enough has been stated to indicate that the point is contestable but sound financial practice has been to recognize the reality of goodwill created and, in view of its intangibility and eventual uncertainty, to build up a substantial reserve fund against this

[39] 'In view of these facts,' wrote the Director of Railway Audit commenting on the capital account of the railway balance sheet 'it seems doubtful whether a chartered accountant would be able to append his signature to this statement as a true balance sheet in the ordinarily accepted commercial understanding of the phrase' *Railway Audit Report* 1931-2, para 115, p. 40. See also *Appropriation Accounts of Railways in India* 1935-6 for the details of the figures used in the text.

[40] Sir P. R. Rau, Financial Commissioner, Railways, examined the question in considerable detail and stated : 'So far as the State is concerned, the capital cost of the railway is the price paid for it, and I can see no justification for making any distinction between that part of the cost to the State representing the original capital invested by former owners, and the balance.'—*Financial Commissioner's Review* 1932-3, para 108, p. 57.

[41] Ripley, op. cit., p. 366.

class of assets.[42] The Director of Railway Audit was not, therefore, wrong in his emphasis. It is obvious that with so large an amount of fictitious assets written into the capital account, financial prudence dictates that an adequate reserve should be maintained against them. And the Financial Commissioner, Railways, himself agreed that there are very good grounds for holding that it is 'financially sound and prudent to provide annually from revenue for a sinking fund to amortize our total capital at charge.'[43]

(f) *Depreciation accounting records unsatisfactory?*

Besides the objections raised against the depreciation accounting system on grounds of principle, the accounting records themselves were subjected to criticism. According to the formula adopted, the appropriation to the depreciation fund in any year was made up of

(*i*) the contribution for the previous year, *plus*

(*ii*) the contribution on the total expenditure on works classified as wasting assets incurred during the previous year calculated by dividing the expenditure on the unit assets by the number of years assumed as representing the normal life of the class and adding the various quotients, *minus*

(*iii*) the contribution which expired during the year on account of assets having reached the end of their normal lives.

While the first and the second parts of the formula were easily calculated, difficulties arose on account of the third part as it related to assets which were acquired long before the institution of the depreciation fund. When the record of assets was opened in 1924-5, the data available were insufficient to provide full or accurate information either as to the date

[42] Sir Arthur Dickinson, grouping patents, goodwill and franchises, stated : '*Provided.. that the principle is admitted of building up a substantial reserve fund against whatever portion of the capital is invested in this class of assets*, it would seem reasonable to merge the three items into one and treat them as part of the permanent invested capital of the business, which may be left to continue at its original value as long as the business is a going concern.' (Italics ours)—*Accounting Practice and Procedure*, 1928, p. 80.

[43] But he continued that in his opinion for purposes of amortization 'the capital at charge should be treated as a whole for this purpose and there is no logical or financial reason for writing off part of it on the ground that it does not represent the cost of the asset in question to the original owners.'—*Financial Commissioner's Review* 1932-3, para 108, p. 58.

when the asset came into existence or as to the date of expiry of its normal life, when contributions on its account should cease. The actual amounts so ceasing were mostly based on guesswork and had, therefore, to be fixed arbitrarily. This would not have mattered much but for other irregularities in the records of the depreciation fund transactions. Thus in November 1931, an arithmetical error was discovered in the instructions issued for the upkeep of the depreciation accounts in 1925. An example given in the instructions implied that contributions in regard to an asset with an assumed life of 40 years acquired in 1924-5 should continue from 1925-6 to 1965-6 inclusive. The latter date should have been 1964-5 for a forty-year period beginning with 1925-6. The error had serious consequences, for entries in the records thus increased the number of contributions by one. In consequence, the contributions on the assets whose lives expired year by year were also wrongly entered in the accounts of the year following. In view of the detailed and enormous work involved, the attempt to recalculate the depreciation for past years was given up and instructions were issued in 1931-2 to the effect that the correct procedure should henceforth be followed. But unexpected difficulties arose and it was decided to make the correct procedure applicable to the assets which came into existence after 1924-5 only.

Scrutiny of the depreciation fund registers revealed by this time that they were in a state of confusion and that the figures could not be depended upon as accurate. They were not subjected to any check or audit scrutiny. The accounts of the state-managed railways were more satisfactory and discrepancies could, it was believed, be fairly settled. But the depreciation fund accounts of the company-managed railways, which were maintained on a *pro forma* basis in the Railway Board's office, were in an unsatisfactory condition. Serious mistakes had been made in the past and erroneous adjustments for non-wasting assets were only rectified in later years. The corrections had to be distributed under the detailed classes of assets and this was a matter of difficulty

as the *pro forma* accounts were maintained in the Railway Board's office and not in the offices of the railways to which the accounts related. The task of correcting the figures was herculean, and even if it could have been accomplished it would not have improved the data regarding the older assets. It was, therefore, left untouched as the results were not worth the trouble, and an escape from the difficulties inherent in the system was found in the simplification of the entire procedure in the new rules.[44]

PRESENT SYSTEM

The force of these criticisms regarding the depreciation accounting system of 1924-5 was recognized and the first change effected was towards the simplification of the entire procedure. It was decided to replace the elaborate calculations to the depreciation fund by fixing the appropriations to the fund at a fixed ratio based on the capital at charge, namely at 1/60th, of the total capital at charge. The new rule was applied with effect from the financial year 1935-6. Government themselves were not quite satisfied about the soundness of the procedure, for in announcing its adoption the Railway Member emphasised that

> 'this decision has been taken purely from the point of view of simplification of procedure and should not be treated as indicative of the final views of Government on the general question of the amount which should be provided for the purpose required. The fraction adopted has been selected to yield as far as possible the same results as the older complicated calculation. In the first ten years, the average annual contribution under the old method was Rs. 12·17 crores, and under the new method it would be Rs. 12·10 crores.'[45]

It may be recalled that the idea of fixing contributions to the depreciation fund as a percentage of the capital at charge was first proposed by the Auditor-General as early as 1932.

[44] *Vide Railway Audit Report* 1930-1, pp. 94-6, and the *Financial Commissioner's Review* 1932-3, para 65, pp. 35-6, regarding the state of the depreciation fund accounts; also the memorandum containing the results of the scrutiny of the *pro forma* depreciation fund accounts of the company-managed railways as conducted by the Director of Railway Audit and his subordinate officers, Appendix xi, p. 83, *Public Accounts Committee Report*, 1930-1, Vol. I, Part II.

[45] Budget speech 1935-6, p. 5.

In July 1934, the Financial Commissioner, Railways, explained that the appropriations to the fund from 1924-5 onwards varied from 1·65 to 1·73 per cent of the capital at charge and proposed a percentage of 1·67, or roughly 1/60th, of the capital at charge. After discussion in the Public Accounts Committee it was decided to adopt the percentage basis as an experimental measure. The reasoning applied was that the appropriations under the old rules were an amalgam of a large number of separate calculations of different assets based on assumed lives which were probably extremely inaccurate. There was no certainty that this actual amount of depreciation calculated was correct within 10 per cent. Since the contributions made so far formed a fairly constant proportion, it was obviously better to adopt the simplified multiplier and save a lot of time in arriving at a result which was not accurate within 10 per cent.[46]

The percentage basis adopted is open to several objections. First of all it applies an average rate—a composite figure—not arrived at by any detailed analysis or grouping of assets. It has merely adopted the average of the ratio of the past annual contributions to the capital at charge. The contributions prior to the change were calculated on the basis of the assumed lives of the different classes of assets and their respective rates. Any change in the relative proportion of the different classes of assets would affect the soundness of the composite figure. Although unlikely over a short period, it is conceivable that the equipment of railways may so alter in character that if 15 per cent of capital expenditure now goes on locomotives and 30 per cent on permanent way these may become 25 per cent and 20 per cent. The percentage ratio might in such a case lead to appropriations either more or less than what should have been correctly made.

[46] Sir James Grigg, Finance Member, and Chairman of the Public Accounts Committee, remarked in the course of the discussions in the Committee : 'Modern accounting theory is moving away from the idea of depreciation fund into making a provision for renewals and replacements and in the end that a renewals and replacement fund must be built up very much on an empirical basis. Indeed accountancy is moving away from a spurious scientific system into an enlightened empiricism.'—*Public Accounts Committee Report* 1933-4, Vol. II, Evidence, Part II, Railways, p. 17.

Secondly, the new rule did not discriminate between wasting and non-wasting assets. This has probably increased the danger of the composite rate falling out of alignment with the true depreciation. The justification for the procedure was in the assumptions made by the Government of India when prescribing the new rule

'that, as a general rule, assets are replaced at the end of their normal life and that, over a series of years, the distribution of the assets of a big undertaking like Indian railways remains more or less constant and finally that the ratio of the wasting assets to total capital at charge is not likely to fluctuate considerably in comparatively short periods.'[47]

Thirdly, as details of the credits, debits and balances relating to the several classes of assets cease to be recorded, the position with regard to the character of the individual assets has tended to be obscured. The short credits to the fund on account of the older assets, whose lives had already expired to some extent but for which no provision had been made, and the premature retirement of assets had, as discussed earlier, caused *minus* balances. It is obvious, in view of what was stated in that connexion, that a watch should be kept on the balances against the various classes of assets.

Finally, the tentative percentage adopted has left an element of uncertainty. It was freely admitted that it did not pretend to represent the correct depreciation contribution and that it might have to be raised. In the event of a change, railways must necessarily fall back on the estimates of depreciation calculated on the bases of the estimated lives. During the very first year of the working of the new rules, 1936-7, the Wedgwood Committee expressing their opinion on this question stated :

'We are not much impressed with the advantage of calculating depreciation on a flat percentage equal to 1/60th or $1\frac{2}{3}$ per cent of the total capital at charge. This method is less laborious, no doubt, than taking the life of each description of asset separately, but we doubt if the labour saved compensates for the loss of accuracy, which may become considerable, whilst the apparently unscientific character of the flat percentage may definitely

[47] *Proceedings of the Standing Finance Committee for Railways*, Vol. XII, 1, p. 46.

weaken the authority of the fund. On the other hand we see no occasion to undertake elaborate calculations of the character that appear to have been thought necessary prior to the Financial Commissioner's memorandum of 11 July 1933.'[48]

OTHER CHANGES

The adoption of a simpler percentage calculation dealt with only one of the problems : to remove the difficulties in connexion with the defects in the maintenance of the depreciation fund registers. The question of principle still remained to be solved. The Financial Commissioner, Railways, discussed the criticisms raised in connexion with the depreciation accounting system of 1924, and proposed the following changes which sought to meet them :

I. (a) When an asset (whether it is technically described as a wasting or a non-wasting asset and whether it is a unit of the former or not) is replaced, the full cost of replacement by a like asset, or the original cost, whichever is greater, should be charged to the depreciation fund and the balance to capital.

(b) The credits realized by disposal of assets in connexion with works of replacement should be given to the depreciation fund and not to revenue as under the original rules.

In other respects the rules will remain unchanged ; thus, for example, the cost of an asset abandoned or retired without replacement will be written off capital by debit to the depreciation fund or when the difference chargeable to capital under the above rules is less than the limit for minor works, the charge will continue to go to revenue.

(c) A provision from revenue of about 1/6 per cent of capital to cover the cost of minor improvements and additions and of unremunerative works should be made when railway revenues can afford this additional charge.

II. The contribution to the depreciation fund should not be changed at present.

III. When railway revenues improve sufficiently they should be expected to provide a minimum of $\frac{2}{3}$ per cent of capital for amortization.[49]

[48] *Wedgwood Committee Report*, para 207, p. 125.

[49] *Financial Commissioner's Review* 1934-5, p. 57. The amounts required to provide adequately for minor improvements and additions and for amortization for 1935-6 were estimated at Rs. $6\frac{3}{4}$ crores.

The reversion to the older principle of allocation and the change as regards credits from disposal of assets released from replacements were thus completed. The other proposals were left to await the return of better times and increased net receipts to afford a margin to stand the charges.

One point in these changes deserves to be mentioned. The whole attitude regarding the status of the depreciation fund has undergone a change. Taking the fact that as no provision was made for the accrued depreciation in 1924 and that the balances ought to be too small rather than too large, it had been argued that the most practical course was to consider the reserve 'not as the theoretical measure of depreciation but as a renewals reserve to provide in the long run adequate funds for meeting renewals as they fall due.'[50] This is, according to the dictum of Sir James Grigg, in consonance with an 'enlightened empiricism' in accounting and free from the shackles of a 'pseudo-scientific' attitude. The change in the perspective has had the effect of broadening the basis of the fund to meet demands other than those originally intended. The Financial Commissioner, Railways, explained :

> 'we should ensure that the reserve should be adequate for the purpose, by fixing the contributions so as to aim at providing a reasonable margin. The margin should be sufficient to allow for a substantial reserve against (*i*) contingencies, such as series of deficits or unforeseen disasters on a large scale, and (*ii*) the possibility of our assets becoming obsolescent more quickly in future A reduction in the amount to be provided annually from revenue for renewals below the present provision of 1/60 of capital cannot be safely recommended.'[51]

While, therefore, the purpose of the fund has been extended to cover, in addition to renewals and replacements, even deficits and unforeseen expenditure, the contributions to the fund on the other hand have been stabilised at a figure originally intended to cover only expenditure for renewals and replacements. The amount fixed does not allow for the compensating change against the overcapitalizing tendency under the older

[50] *Financial Commissioner's Review* 1934-5, p. 55.
[51] Ibid., pp. 55-6.

rules and the arithmetical error already commented upon. That the difficulties on account of which the present change has been adopted are not insuperable is clear from the fact that on the American railways a detailed system of depreciation accounting has been prescribed as regards equipment. The Interstate Commerce Commission discussing in the course of their report the importance of depreciation accounting stated :

> 'The purpose of accounting is to record the essential financial facts with respect to the property and its operations. Most of these facts can be ascertained with precision, but not all of them. It is not a sound principle of accounting that facts of the latter kind should be disregarded. Obviously the record will be closer to accuracy if they are approximated as nearly as may be. Depreciation is a fact of this type. It cannot be ascertained with precision, because the future cannot be foreseen with certainty, yet it is a part of the cost of operation. Accounting fails of its purpose if it does not supply the best available information with respect to this or any other similar fact.'[52]

The principles adopted as regards the accounting procedure were outlined in the Commission's finding 6 in the same report. It runs as follows :

> 'We find that the group basis of depreciation accounting, as distinguished from the unit basis, should be adopted ; that for corporate ledger and balance sheet purposes the depreciation reserve should be regarded and treated as a single and composite reserve ; but that for purposes of analysis the carriers should maintain subsidiary records in which the reserve is broken down into component parts corresponding to such primary investment accounts under the respective classifications for steam railroad companies . . . as include property hereinbefore found to be depreciable, showing in these records also in complete detail by such primary accounts the current credits and debits to the reserve ; and that such detailed information should be reported annually to this Commission and to the Commissions of all States in which the carrier operates.'[53]

The instructions accompanying these orders, which became effective during 1934, prescribed that percentage rates should be developed by sub-classes of property within each primary

[52] Interstate Commerce Commission Report No. 14700, Depreciation Charges of Telephone Companies, 15100 Depreciation Charges of Steam Railroad Companies, 1931, 177 I.C.C., p. 382-3.

[53] Ibid., p. 445.

account. These are component rates and from these component rates is ascertained the rate for each entire primary account. From the total of the estimated annual depreciation charges, against each primary account the composite rate of depreciation for all equipment amounts is determined. The procedure adopted recognises the possibility of changes in the individual sub-classes of property and modifies automatically the composite rates.[54]

That increasing emphasis is being laid on proper depreciation accounting is evident from the recent developments on the American railways. On the South African railways also there has been an attempt to introduce certain amplifications and refinements in the existing provision for renewals. The practice followed during recent years was to fix the annual appropriations at 60 per cent of the depreciation charges correctly ascertained on the basis of the estimated lives of the assets. Sir Guy Granet's Committee, recommending that the question of the financial provision for renewals should be

[54] The detail in which the depreciation accounting is carried out may be indicated. Each kind of property included in the primary accounts, with respect to which the basic data, *i.e.*, the ledger value, service life, salvage value, etc., are different is to be listed separately and a rate per cent is determined for the same. The rate per cent determined for each sub-class of property will be known as a component rate, this in recognition of the fact that immediately after a composite rate has been computed for the primary account, the quantity of the various classes of property within each primary account will be subject to fluctuation with the result that the composite rate may shortly thereafter become inapplicable, whereas the component rates will continue to be applicable until such time as the estimate of service life or salvage value changes.

It is contemplated, therefore, where the composite rate as prescribed by the Commission has been developed by the application of component rates to the various subclasses of property within a primary account and a segregation of the property to which they are applicable as maintained is available. That such component rates may be used to compute the current depreciation charges regardless of the fact that the amount of the various classes of property has so changed in the meantime as to make possible the computation of a slightly different composite rate. In each case a company is asked to state whether it prefers to apply the component rates in preference to the composite rate prescribed by the Commission. In view of the fact that certain companies had not filed the requisite data, the Commission prescribed the composite percentage rates under the primary accounts as follows :

Primary Account	Rate %	Primary Account	Rate %
Steam locomotives	3·25	Floating equipment	2·50
Other locomotives	3·25	Work equipment	3·50
Freight train cars	3·50	Miscellaneous equipment	12·00
Passenger train cars	2·75		

Originally limited to rolling stock, the Commission, in view of the sharp increase in earnings since 1939, extended depreciation accounting to fixed property with effect from 1942.

It is worthy of note that while our railways are receding from strict and detailed depreciation accounting towards an arbitrary basis of contribution, American railways are adopting detailed and elaborate accounting methods.

reviewed, stated that 'the general basis for the annual charge should be the current net replacement cost of the assets in service divided by the estimated lives of such assets.'[55] and that 'the renewals fund should be regarded as required to meet a definite liability in respect of the net cost of replacing assets at the end of their economic lives.'[56]

In the light of these considerations, the present arrangements with effect from 1 April 1936, are not altogether satisfactory. The change in the status of the depreciation fund was due to the financial condition of railways during the depression. As may be seen from Table 85, railway deficits since 1931-2 were met by temporary loans from the depreciation fund. The total amount borrowed during the five years, 1931-6, amounting to Rs. 31·50 crores, was, under the Separation Convention, to be repaid out of future surpluses. Including the contribution suspended since 1931-2, the total liability amounted to Rs. 61 crores. The magnitude of the figure, the state of railway working and the general economic situation rendered the prospect of redemption at the time too remote, indeed impossible. The Railway Member and his department proposed early in 1937 to cut the Gordion knot and argued :

> 'The wisest plan in the circumstances appears to be to write off all these liabilities and to start the next year on the basis of a clean slate so far as these liabilities are concerned.'[57]

The pressure for an early resumption of the contributions to the general revenues was, with the approach of the constitution of the new provincial governments under the Government of India Act, 1935, becoming greater after Sir Otto Niemeyer's Report. But without meeting the accumulated liabilities in regard to the depreciation fund and the accrued contributions which formed the first charge on the surpluses of future years, Government could not appropriate the profits which might emerge. In fact, at the commencement of 1937

[55] *Report of the Railway and Harbour Affairs Commission*, 1934, para 49, p. 131.
[56] Ibid., para 52, p. 13.
[57] Railway Budget Speech 1937-8, p. 6.

railways were beginning to show increased receipts and the prospect of a surplus after meeting interest charges in full. A resolution was, therefore, introduced in the Assembly proposing an entire cancellation of the accumulated obligations and starting the financial year 1937-8 with a clean slate. The proposal to repudiate a debt of over Rs. 60 crores could not help arousing severe criticism and opposition.[58] Referring to the Government's view that the actual balance at the credit of the fund at the time was sufficient, the Wedgwood Committee pointed out :

> 'The decision to write off the amounts borrowed from the depreciation fund does not alter the balance of the fund, nor does it affect the ability of the railways to increase the balance if that should be thought desirable. It does, however, by relieving the railways of an obligation to repay the amounts borrowed, convey an implication that the present credit balance is an adequate one.
>
> The adequacy of this balance cannot be measured by reference to immediate requirements. The object of creating a depreciation fund is to enable regular annual appropriations to be made from revenue, in bad years no less than in good years, for the purpose of meeting expenditure on renewals ; and this expenditure may fluctuate widely in amount from one year to another. It is essential that the fund should be maintained at such a level as will permit of exceptional requirements being met ; moreover emergencies may arise, with far greater likelihood in India than in Great Britain, which may make sudden and heavy demands upon the fund. Having regard to these considerations and to the balances which are regarded as proper on other railways of which we have experience, we are of opinion that the present balance of Rs. 14 crores is substantially lower than financial prudence demands, and that a normal balance of Rs. 30 crores would not be excessive.'[59]

It is indeed surprising that Government should have taken up this attitude in the face of the views so unequivocally expressed by the Financial Commissioner, Railways, the Auditor-General and the Public Accounts Committee. There was, if anything, a strong case not only for not tampering with the fund, but for making additional provision to meet emergencies and other demands foreign to the essential purposes

[58] The principal aspects of this problem are discussed by the present writer in 'Federal Finance and the Future of the Railway Contributions,' *Railway Accounts and Finance*, Vol. III, pp. 65-77.

[59] *Wedgwood Committee Report*, para 206, pp. 124-5.

of a proper depreciation fund. As the Wedgwood Committee remarked :

> 'The financial position of the railways is thoroughly unsound when the depreciation fund has to be raided to pay interest charges. Bad years are certain to recur in the future, as in the past. During the recent series of bad years it was found possible to maintain the full payment of interest charges only by drawing nearly Rs. 50 crores from the funds. The general reserve fund was depleted within three years, and the depreciation reserve fund was reduced to one-quarter of its original figure before the economies effected and the return of better trade saved the situation.'[60]

The fate of the cancellation resolution was thus clear. With the temper and strength of the opposition in the Central Legislature it was obvious that it would be lost if put to the vote. But without some such measure, it was impossible for the Government to appropriate the anticipated surplus during 1937-8. Escape from this dilemma was found in a resolution moved by the Finance Member proposing a moratorium for three years in respect of the repayment of these liabilities. Its acceptance permitted the appropriation of the surplus revenues by Government without making good the accrued liabilities during the depression. Far from facing the problem, it merely postponed a discussion of it for three years. After three years, the moratorium was once again renewed for a further term of two years.

The status of the depreciation fund and its future was thus rendered exceedingly uncertain, in spite of all the attempts to clarify the problems and issues involved. It was obvious that unless railway revenues witnessed a phenomenal increase, the prospect of railways meeting the accumulated obligations, particularly to the depreciation fund was not likely to be different on the expiry of the extended moratorium. But the unexpected did happen after the outbreak of World War II. How the phenomenal increase of receipts solved these problems must be dealt with elsewhere.

Before concluding this chapter, it should be stated that it has not been possible to examine the provision for depre-

[60] *Wedgwood Committee Report*, para 210, p. 127.

ciation on individual railways for three reasons. Firstly, depreciation accounting applied only to the state-managed system. Though a *pro forma* account of depreciation on the same basis was kept for the company-managed lines, it had no significance to them in actual working results, as under the contracts they continued on the old basis of revenue bearing all charges of renewals and replacements. The depreciation accounts of the company-managed railways were thus only of theoretical interest. Secondly, the question of principle was more important than that of procedure and the individual railways had no voice in deciding it; they merely carried out the rules laid down by the Railway Board. Thirdly, with the adoption of the percentage basis, details are no longer available for recent years, as the aggregate figure of the appropriations to the fund has become a function of the capital at charge.

Despite the shortcomings in the present system of depreciation accounting it must be recognized that it was a great step forward. There are not many foreign railways which have so comprehensive a system of depreciation accounting as the Indian railways. Apart from promoting the fidelity of railway accounting, it has clarified certain fundamental concepts in railway finance. The principles underlying the present rules, particularly after the change of 1936, are sound and beyond criticism. With the incorporation of the further refinements to include provision for betterments and amortization, the depreciation fund will constitute the best financial safeguard to combat obsolescence in future and to ensure the proper maintenance of our vast railway assets. Even from the less circumscribed point of view of national finance, it is desirable in the long run to place railway finance on a satisfactory footing so that the general budget is not affected by unexpected demands from railways caused by inadequate provision.

Although the present position of the depreciation fund affords ground for satisfaction, the manner in which the whole question

was treated by Government during 1931-42, gives rise to concern for the future. The temptation of present gain to Government threatened the proper maintenance of the fund for over a decade. But for the turn in the tide, bringing spectacular increases in railway revenues since 1939, the continuance of the fund on the existing scale would have been in grave doubt. If sound policy is likely to be jeopardized by the financial exigencies of the State—which also happens to be the controlling authority for Indian railways—proper safeguards are necessary to avoid a similar situation in the future, a subject which is dealt with at some length later.

CHAPTER IX

COST OF STAFF

TOWARDS the close of our study of railway expenditure, it was suggested that much of its intractability is to be ascribed to the trend of the wages bill. The importance of wages was obscured in our examination of railway expenditure by the minor heads and abstracts. It is only when the total amount of wages is considered separately that the cost of staff is found to be the largest single item in the annual disbursements of railways.

Indian railways are the largest employers in the country and their wages bill amounts to more than Rs. 35 crores a year. The number of employees on all railways exceeded eight hundred thousand in 1929-30 and seven hundred thousand in 1936-7. It is not therefore surprising that the cost of a staff of this magnitude should amount to 50-5 per cent of total working expenses, as the following comparison for selected years indicates:

PROPORTION OF THE COST OF STAFF TO TOTAL WORKING EXPENSES*

(*In crores of rupees*)

Year	Total working expenses	Cost of staff	% of total working expenses
1924-5†	66·35	33·11	50
1929-30	73·82	39·70	54
1936-7	67·47	36·62	54

* *Railway Board's Reports.* Revised figures used wherever available

† Excludes Jodhpur Railway.

After the last war, there was a prodigious increase in the cost of staff. The total cost on the fourteen Class I railways—as they were later termed—more than doubled over a period of nine years, 1913-4 to 1921-2. The figures may not be strictly comparable owing to certain items included from 1923-4 onwards, and still further items from 1928-9 onwards, but even confining our attention to 1913-4 to 1920-1, the percentage increase was 91 over the pre-war period; it rose to 126 during the next two years. From 1924-5 onwards a still greater increase occurred, reaching the peak figure of Rs. 39·70 crores in 1929-30, or a percentage increase of 184. Although the increase was slightly exaggerated by the inclusion of certain new items, the figures bear witness to the steep

TABLE 89. TOTAL NUMBER AND COST OF EMPLOYEES*

(CLASS I RAILWAYS)

	Number of employees All railways		Open line Class I railways		Cost of staff Class I railways	
Year	No.	%	No.	%	Rs. in crores	%
1913-4	633,305	100	618,374	100	14·01	100
1920-1	749,010	118	725,689	117	26·68	191
1921-2	759,846	120	734,945	119	28·90	206
1922-3	749,680	118	723,241	117	29·02	207
1923-4	720,754	114	695,960	113	31·42	226
1924-5	745,216	118	715,608	116	33·11†	236
1925-6	751,603	119	721,242	117	34·71	248
1926-7	772,563	122	740,164	120	36·34‡	259
1927-8	802,209	127	768,648	124	38·14	272
1928-9	808,433	128	774,515	125	39·31§	281
1929-30	817,733	129	783,902	127	39·70	284
1930-1	781,859	124	746,779	121	39·12	279
1931-2	731,979	116	679,048	113	36·41	260
1932-3	710,512	112	678,046	110	34·39	245
1933-4	701,436	111	667,371	108	35·15	251
1934-5	705,656	111	670,610	108	35·40	253
1935-6	712,778	113	676,817	109	36·36	259
1936-7	687,260	109	674,790	109	36·62	261

* *Railways in India Administration Report*, 1913-4, 1920-1; *Indian Railways Administration Report*, 1921-3; and *Railway Board's Reports* for subsequent years. Revised figures, wherever available, have been used.

† In *Railway Board's Report* for 1924-5 it is stated that from that year onwards the figures include salaries, wages, overtime allowances, and all other allowances which are of the nature of extra pay, and which are not granted to meet some expense incurred in the performance of duty such as travelling allowance. But in the *Memorandum of the Railway Board for the Royal Commission on Labour*, 1930, the figure for 1913-4 is also supposed to include the same items.

‡ Excludes Jodhpur.

§ The figures from 1928-9 onwards include also bonus contributions, contributions to the provident fund, gratuities and the cost of construction staff.

rise in the cost of staff. The wages bill, as may be seen from Table 89, showed a decrease during the period of the depression and, in 1932-3, the lowest level was touched with an expenditure of Rs. 34·39 crores. During the next four years there was an increase, and in 1936-7 the cost of wages increased to Rs. 36·62 crores. The economies which were carried out during 1931-7 had apparently little effect on the cost of staff, which during the period stood more than 2½ times that for 1913-4.

In making a comparison with earlier years, it should be borne in mind that extensions to the railway systems have led to increases of staff. From 633,000 in 1913-4, the number of employees increased to about 750,000 in 1920-1, an increase of 18 per cent. During the next four years, 1921-5, there was fluctuation, but by 1925-6 the number rose again to the previous level. The years which followed the Separation Convention witnessed a rapid rise and in 1929-30 the number of employees stood at 817,733, an increase of 29 per cent. The rise in the cost of staff was thus considerably greater than the comparative increase in the number of employees, which, on the Class I railways, tended to be slightly less than that indicated by the figures for all railways.

RISE IN STAFF COSTS COMPARED WITH OTHER FACTORS

As the strength of staff maintained is also determined by the volume of traffic, we may compare the pace of increase in the cost of staff and the number of employees with that in the passenger milage, ton milage and route milage. It will be seen from the comparative figures given in Table 90 that during the twelve years, 1913-25, the route milage of the Class I railways rose from 30,533 to 32,604, an increase of 7 per cent. The business of the railways, namely, the volume of transportation in terms of passenger miles and ton miles, increased respectively by 19 per cent and 35 per cent. The number of employees went up by 16 per cent. The highest percentage of increase is that shown by working expenses, which stood 110 per cent higher than in 1913-4. Even higher stood the increase in the cost of staff, which was 139 per cent.

TABLE 90. COMPARATIVE INCREASE IN COST OF STAFF*
(CLASS I RAILWAYS)

	1913-4	1924-5	% of 1913-4	1929-30	% of 1913-4	1935-6	% of 1913-4
Route milage	30,533	32,604	107	35,346	116	35,964	118
Passenger miles	15,707	18,585	119	21,626	138	16,821	107
Ton miles	15,213	20,621	135	20,802	137	19,776	130
No. of employees	597,415	693,814	116	774,872	130	654,080	109
Working expenses	Rs. 31·29	65·56	210	72·17	231	64·52	206
Cost of staff	Rs. 13·62	32·57	239	38·77	285	35·30	259

* Source: For 1913-4, *Report of the Royal Commission on Labour in India,* 1931, p. 149; for subsequent years, *Railway Board's Reports,* Vols. I and II. The figures used are revised, and exclude the Jodhpur and N.(G.)S. Railways. The number of employees and cost of staff for 1929-30 and 1935-6 include construction staff. Passenger miles and ton miles are in millions, and Rs. in crores.

The comparatively higher rate of increase in the cost of staff is seen in a still more accentuated form in 1929-30. The percentage increase of wages was still higher than that of all other factors and amounted to 185. The increase in the wages bill was out of all proportion to the increase in the route milage, transportation effected, number of employees or total working expenses.

The increase in the cost of wages has been general and is to be noticed on all railways. In Table 91, the increase in the cost of staff on the Class I railways is compared with

TABLE 91. COMPARATIVE INCREASE IN COST OF STAFF ON THE PRINCIPAL STATE-OWNED RAILWAYS*

(1913-4 = 100)

	1924-5					1929-30				
Railways	Route milage	Pass'gr miles	Ton miles	No. of emp'ees	Cost of staff	Route milage	Pass'gr miles	Ton miles	No. of emp'ees	Cost of staff
Burma	115	114	166	129	212	132	123	207	145	256
E.B.	103	119	115	107	222	113	148	136	125	274
E.I.†	101	105	140	127	263	96	132	135	116	290
G.I.P.	114	126	114	85	244	122	135	101	112	287
N.W.	112	136	126	112	231	132	166	111	130	290
A.B.	129	172	140	126	140	157	220	201	178	300
B.N.	111	138	178	162	256	122	147	233	181	336
B.B.&C.I.	105	128	142	118	274	107	121	134	124	306
B.&N.W.‡	102	123	141	108	179	102	150	140	115	205
M.&S.M.	97	110	141	116	220	103	127	152	123	247
R.&K.‡	103	122	135	108	162	103	112	150	123	178
S.I.	113	86	122	117	219	142	120	149	144	268

* Calculated figures taken from *Indian Railways Administration Report,* 1913-4 and *Railway Board's Report* 1929-30.

† Includes the figures of the O.&R. ‡ Not State-owned.

the increase which has taken place in the route milage, traffic and the number of employees. On three railways, the A.B., B.N. and B.B.&C.I., the cost as compared with 1913-4 had trebled or more than trebled by 1929-30. The B.&N.W. and R.&K. exhibited the lowest extent of increase. The other railways had increases of 150 per cent. The percentages for 1929-30 disclose a further increase on those for 1924-5 on all the lines.

REVISION OF SCALES

It should be observed that a large increase had already occurred by 1924-5 and that the subsequent increase was only a continuation of the movement. During and immediately after the war, the price level and the cost of living rose by leaps and bounds. The average cost of articles of consumption as compared with the price level in July 1914 stood 12 per cent higher at the end of the first year of the war, 25 per cent at the end of the second year, 42 per cent at the end of the third year, 78 per cent at the end of the fourth year and 88 per cent at the end of December 1918. In the case of certain articles the increase was much greater. It was realized by 1917 that the cost of living had advanced considerably and that salaries and wages had to be increased. To meet these conditions, temporary increases were given to railway labour in 1917 in the form of a war allowance, the rate of which was enhanced from time to time till 1920. In that year the allowance was merged in a general revision of the scales of pay. The scheme of revised pay, as framed and sanctioned, took account of the increased cost of living in the different provinces traversed by railways. As the lower-paid employees were particularly affected by the higher prices of the necessaries of life, the percentage of increases was fixed on a sliding scale, giving much larger proportionate increases in the lower grades. These measures were not designed for railways alone; they were part of the general policy of Government. As the State railways were managed as a department of the Government of India the changes introduced in other departments were applied to the railways

as well. According to the increases sanctioned, the employees on different grades of pay received increments approximately on the following basis[1]:

Men on Rs.	10 to 20 on 1 August 1914 would get		66 per cent
,,	25 ,, 60 ,, ,,		50 ,,
,,	70 ,, 110 ,, ,,	about	40 ,,
,,	120 ,, 250 ,, ,,	,,	33 ,,
,,	260 ,, 330 ,, ,,	,,	28 ,, .
,,	above Rs. 330 Rs. 100 lump sum addition.		

When these enhancements were made the need to provide for an adjustment in the event of a decline in the cost of living was overlooked. In 1920, when the rates of pay of nearly all classes of government servants, including those on the railways, were increased by about 100 per cent on the ground that the cost of living had gone up, there was no stipulation, as was made in Great Britain, that the question would be reconsidered when prices came down. The Inchcape Committee, pointing out this omission, stated that whereas in 1920 the index number for Bombay was 193 on the basis of the pre-war standard figure of 100, it had come down to 156 at the time of their enquiry. In view of the decline they recommended that the matter should be investigated by the Central and Provincial Governments. In 1924 the Royal Commission on the Superior Civil Services in India[2] made certain recommendations as regards the pay and allowances of government officers. Before discussing the developments from that year onwards the character of the post-war and post-separation changes in the standards of salaries and wages may be briefly indicated.

The effect of the successive revisions in the scales of pay of the different classes of railway employees may be seen from Table 92. The figures indicate that the average cost of employees of all classes had gone up considerably. It may be seen how the average cost for 1928-9 was very much higher as compared with 1920-1, which reflected the increases justified by the war-time rise in the cost of living.

[1] *Memorandum by the Railway Board for the Royal Commission on Labour*, 1930, p. 307.
[2] Hereinafter referred to as the Lee Commission.

TABLE 92. AVERAGE COST PER EMPLOYEE*

Railways	Transportation (Traffic)			Mechanical engineering (Loco. carr., & wagon)		
	1913-4 Rs.	1920-1 Rs.	1928-9 Rs.	1913-4 Rs.	1920-1 Rs.	1928-9 Rs.
I. Superior officers						
E.B.	8,657	9,845	15,462	9,544	10,600	16,097
G.I.P.	..	..	17,069	..	..	20,827
A.B.	7,555	10,199	11,019	8,188	11,233	12,636
B.&N.W.	7,560	7,813	12,498	8,130	9,967	13,347
B.N.	8,942	9,743	14,286	10,838	13,862	15,668
B.B.&C.I.	9,986	9,727	14,884	10,566	13,842	13,240
R.&K.	5,718	9,188	8,335	7,808	11,715	8,765
S.I.	9,732	10,752	13,500	12,300	17,616	14,520
II. Subordinate staff (drawing Rs. 250 *per mensem* and over or on scales of pay rising to Rs. 250 and over)						
E.B.	3,032	4,335	4,875	4,145	4,707	4,857
G.I.P.	..	..	4,574	..	..	5,583
A.B.	2,670	3,207	3,571	3,362	4,634	4,853
B.&N.W.	3,316	3,669	3,620	3,072	4,080	4,284
B.N.	2,730	2,636	3,446	4,336	5,298	3,476
B.B.&C.I.	3,315	3,216	3,708	4,437	6,256	5,585
R.&K.	..	3,126	3,390	3,147	3,677	3,666
S.I.	3,012	3,300	3,420	4,080	3,636	3,996
III. Subordinate staff (drawing scales of pay rising from Rs. 30 to less than Rs. 250 *per mensem* or terminating at Rs. 250)						
E.B.	576	686	964	1,180	1,332	1,759
G.I.P.	..	..	890	..	..	801
A.B.	602	679	757	442	569	548
B.&N.W.	473	534	614	708	600	510
B.N.	564	723	913	420	619	757
B.B.&C.I.	591	954	1,774	1,219	1,645	903
R.&K.	576	556	606	796	541	618
S.I.	432	636	576	1,116	1,056	1,092
IV. Subordinate staff (drawing less than and terminating under Rs. 30 *per mensem*)						
E.B.	111	174	209	162	221	232
G.I.P.	..	..	249	..	..	322
A.B.	165	210	201	166	191	183
B.&N.W.	89	122	145	102	159	192
B.N.	102	146	188	108	156	222
B.B.&C.I.	124	237	217	202	332	239
R.&K.	121	147	149	107	181	171
S.I.	72	156	144	216	336	348

* *Memorandum by the Railway Board for the Royal Commission on Labour*, 1930, pp. 228-31.

The task of examining the trend of wages of the different groups of railway employees is rendered exceedingly difficult by the absence of adequate data. The information available is not only insufficient; even what is supplied does not assist economic analysis. Till 1923-4, only the total number of employees and their aggregate wages were published in the Railway Board's annual reports. After that year, the information was amplified to exhibit separately the number of officers and their total cost, the higher classes of subordinates in the different departments, and the total strength and cost of staff. The object of the additional information presented was to show the progress of Indianisation and the policy followed with regard to recruitment each year. Thus the statistics available throw more light on the racial or communal composition than on the economic aspects of railway labour. The broader classification adopted is that of dividing the employees into 'gazetted officers', or 'officers on a corresponding status' on the company-managed railways, and 'non-gazetted', or subordinate staff. While detailed information is available as regards officers, additional data for non-gazetted staff relate only to a section, namely, 'subordinates drawing Rs. 250 *per mensem* and over or on scales of pay rising to Rs. 250 *per mensem* and over.' This group is referred to as 'upper' subordinates. But the bulk of the employees is outside these two classes, and their status and emoluments are only to be ascertained by inference.[3] It is only since 1938-9 that there has been an improvement and statistics by certain pay-categories are available.

[3] The inadequacy of the statistics of railway labour was commented upon by the Royal Commission on Labour in the following terms: 'While acknowledging the ready assistance given by the Railway Board and its officers, we feel attention must be drawn to the necessity for information concerning staff matters being made more readily available in published reports. For many years the annual reports . . . have given operating and financial figures in considerable detail, but it is only within the past year or two that staff statistics have been published to any extent. These consist mainly of statements designed to show the progress made in Indianisation and in the recruitment of minority communities and give very little information as to wages and staff costs in different branches of the service. We find an absence of uniformity in nomenclature which prevents exact comparisons being made of the numbers of employees and of working costs in the different departments of the various railways.' The Commission recommended that proper figures should be available and though that recommendation was made in 1931, the Railway Board has not varied its practice.—*Royal Commission Report on Labour in India*, 1931, p. 171-2.

In view of the limitations of the statistical data, we may consider the three broad categories of railway staff.[4]

I. GAZETTED OFFICERS

The number of employees in the officer grade during 1924-5, 1929-30 and 1936-7 is shown in Table 93. The increase which had occurred in the number of officers up to 1930 was, as shown by these figures, replaced by a decrease by 1936-7 to levels lower than in 1924-5 itself.

TABLE 93. NUMBER OF GAZETTED OFFICERS AND OFFICERS OF CORRESPONDING RANK ON COMPANY-MANAGED RAILWAYS*

Railways	1924-5		1929-30		1936-7	
Burma	105		126		97	
E.B.	125		137		119	
E.I.	314		338		300	
G.I.P.	221		245		215	
N.W.	293		313		267	
	——	1,058	——	1,159	——	998
Ry. Board & misc. offices		84		99		77
A.B.	61		78		68	
B.N.	221		219		190	
B.&N.W.	59		72		73	
B.B.&C.I.	194		188		170	
M.&S.M.	144		157		137	
R.&K.	13		13		17	
S.I.	114		149		124	
	——	806	——	876	——	779
		1,948		2,134		1,852

* *Railway Board's Reports*, Vol. I.

Changes in scales of pay

The scales of pay for officers have an interesting history.[5] The original scales prior to 1900 were revised by the addition of a number of refinements during 1908-12, such as time-scales and improved grades. During 1919-22 time-scales were introduced for all departments and a 'technical' pay for civil and mechanical engineers and an 'overseas' pay for officers

[4] The terms 'gazetted' and 'non-gazetted', though strictly speaking applicable only to the State railway staff, have been used to indicate the two groups of corresponding status on the company railways, for the sake of convenience and to avoid confusion of terms.

[5] See *Railway Retrenchment Sub-Committee Report*, pp. 57-8.

recruited from Europe were added. The standard of the scales was as follows :

Assistants (junior scale)Rs. 300-900 District officers (senior scale) Rs. 550-1,300	*plus* Rs. 75 technical allowance for engineers *plus* overseas pay Rs. 150 to Rs. 250 for Europe-recruited members.

Deputies varying from Rs. 1,750 to Rs. 2,150, engineering and Agency
Chiefs varying from Rs. 2,750 to 3,000 (engineering)
Agents Rs. 3,500

As a result of the Lee Commission's recommendations, new Superior Civil Services rules were made in 1924 according to which salaries were split up into 'basic' pay and 'overseas' pay, the latter being a fixed amount varying according to the scales of 'basic' pay from £15 to £30. A second change in the standards of compensation was the more liberal system of passage allowances to European officers. Thirdly, officers were accorded increased facilities for medical attendance.

The revision of 1924 left the scales of assistants and district officers undisturbed, but the maximum of overseas pay was raised to Rs. 300 with a sterling rate varying, as stated above, from £15 to £30. In the following year, with the introduction of the divisional system, a new class of officers, divisional superintendents, came into existence, and their scales of pay were fixed at Rs. 1,950 to Rs. 2,150.

High cost criticised

The justification for the successive enhancements and modifications of pay since 1900 was 'increased responsibility', 'to attract recruits of the right stamp from England', 'abnormal rise in the cost of living', etc. Discussing the criteria of pay and service, the Islington Commission of 1913-6 observed that 'Government should pay so much and only so much to their employees as is necessary to obtain recruits of the right stamp and to maintain them in such a degree of comfort and dignity as will shield them from temptation, and keep them efficient for the term of their service.' On this principle the com-

mission held that it would meet the case if an incremental scale of Rs. 250 to Rs. 500 for provincial services and Rs. 300-1,000 or Rs. 1,050 for Imperial services was adopted, with of course selection grades or posts on pay suitable to each service. For officers recruited from Europe a slightly higher rate, equivalent to an advantage of Rs. 186 *per mensem*, was adopted. Correlating the scale to the decline in the cost of living and recognizing the limitations of the wholesale price indices, the Railway Retrenchment Sub-Committee recommended the Islington scales to new entrants, as 'it would be "restoring the real pay of the services to the level" which was expected to be attractive in 1916, when conditions were no better than they are now.'[6] The sub-committee agreed with the Railway Board in the view that continuous time-scales of pay are generally undesirable, except in the first few years of an officer's service, and consequently did not recommend any time-scale for the pay of senior scale officers. With regard to the pay of the Agent, however, they would not fix any definite limit: 'The actual pay given must depend on the man'.[7]

It will have been seen from the foregoing summary of the changes in the scales of pay of officers that by 1931 the standards were pushed up. During the period following the Separation Convention, there was also a gradual fall in the cost of living and the enhancements which were made to compensate for the higher cost of living during the immediate post-war years ceased to have any justification. The decline in the price level had also another consequence: the scales of *real* as opposed to *nominal* pay were raised higher with every fall in the

[6] *Railway Retrenchment Sub-Committee Report*, p. 59. The new scales of pay recommended by the sub-committee were:
Junior scale—from Rs. 250 to 500 with overseas pay between Rs. 100 and Rs. 250.
Senior scale—Rs. 600-800-1,000 ,, ,, ,, ,,
Deputy heads of departments—Rs. 1,250 and 1,500 with overseas pay Rs. 150.
Divisional superintendents—Rs. 1,750, with overseas pay of Rs. 150.
Heads of departments—Rs. 2,000 (Rs. 2,250 on larger railways).
Agents—Rs. 3,000.
It was added that overseas pay would be admissible only if the recruits of European domicile were recruited from Europe.

[7] The sub-committee said: '. . . we think that circumstances might easily arise in which it would be very desirable to go outside the ordinary run of railway men to select for the post of Agent a particularly good business man, for example of the type of Sir Josiah Stamp, who is now the head of one of the biggest English railways. Salaries must in such case be a matter of negotiation.'—Ibid., p. 59.

price level. If the higher scales adopted in the early twenties were fair and equitable at the prevailing level of prices, the decline in the latter should have been followed by a corresponding readjustment in the former.

The changes enumerated in the preceding paragraphs were those introduced on the state-managed railways for officers of gazetted rank. Company-managed railways generally followed the state-managed railways in these matters and introduced similar enhancements in regard to the salaries of their own officers. Thus all the Lee concessions which were granted to State railway officers were extended to company railway officers as well.[8]

Turning now from scales of pay to strength of staff, the position in 1931 was reviewed by the Railway Retrenchment Sub-Committee. They found that there was 'a *prima facie* case for drastic reduction.' According to them the increase on the North Western Railway in the number of officers was not justified.[9] The curtailment of capital works for which most of these officers were engaged did not affect their strength. There was, similarly, room for reduction in the leave and deputation reserves and the permanent posts for construction and surveys.[10] The sub-committee stated their conclusion

[8] The officers of company-managed railways were treated on the same footing as their confreres on state-managed railways. Thus in the Budget for 1926-7, provision was made for an arrear payment of Rs. 17 lakhs for the extention of the Lee concessions to officers of the E.I., G.I.P., and company-managed railways with effect from 1 April 1924. *Vide Budget for* 1926-7, p. 91.

[9] The figures quoted by the sub-committee were :

	1924	1931
Bridge department	4	10
Electrical department	3	7
Mechanical shops	6	15

[10] The Retrenchment Sub-Committee observed : 'The new cadres of officers for state-managed railways include 139 posts in the junior scale to provide a reserve for leave and deputation and also 36 posts for construction and surveys. We were informed that the former was calculated at 20 per cent of the working posts roughly divided as 16 per cent for leave and 4 per cent for deputation. We discussed with the Railway Board the possibility of reducing this reserve as we were of opinion that it is not necessarily an economical plan to have such a reserve. It was likely in our opinion to lead to a superfluity of officers during the winter when fewer officers went on leave. Mr. Hayman admitted that in winter the present leave reserve might prove excessive, but he claimed that it was for that reason that they had combined the leave and deputation reserves, the idea being to use the surplus officers for special duties during the winter. We are not enamoured of this arrangement. With a superfluity of officers, there is always a tendency to create work for them and this leads to further unnecessary expenditure. We are convinced, therefore, that the leave reserve should be based on the minimum number of officers on leave at any time during the year and that the larger number of vacancies that exist in other parts of the year owing to the greater number of officers on leave should be filled

in the following terms : 'Railways should, in our opinion, not have a bigger staff than in 1924, seeing that the traffic is likely for several years to be on a lower level, and work connected with the capital program considerably reduced.' Apart from this they also proposed drastic cuts in salaries on a graduated scale.[11]

Within a few weeks of the publication of the Retrenchment Sub-Committee's Report, the Government of India, with the approval of the Secretary of State, brought into effect from December 1931 the Railway and Posts and Telegraphs (Emergency Deductions from Salaries) Rules, 1931, according to which a deduction was made from the pay and allowances in the nature of pay for all railway servants, including the daily rated employees on the following scales :

Where the pay and allowances in the nature of pay

	Reduction
(*i*) do not exceed Rs. 30 *per mensem*	Half an anna in the rupee for every complete rupee
(*ii*) exceed Rs. 30 but do not exceed Rs. 83-5-4 *per mensem*	One anna in the rupee for every complete rupee
(*iii*) exceed Rs. 83-5-4 *per mensem*	10 per cent[12]

In addition to this emergency cut in salary, the cadres themselves were reduced in strength. In February 1932 the

in an officiating capacity by deserving subordinates. This procedure will have the additional advantage of enabling the administration to test the capacity of those subordinates before permanently promoting them. This will be all the more necessary as owing to our proposal to abolish the lower gazetted service, the percentage of promotion from subordinate ranks to the superior services is likely to be increased in future. We understood from the Railway Board that at present they were not in a position to say what were their minimum requirements for leave. Till such experience has been gained, we recommend that the present reserve should be at once cut down by half. Similarly in view of the fact that at present and for the next few years, there is very little hope of money being found for new construction we consider that it is unnecessarily extravagant to provide in the permanent cadre for posts for constructions and surveys and we recommend that the 36 posts provided therein should be abolished forthwith.'—*Railway Retrenchment Sub-Committee Report*, p. 54.

[11] The sub-committee proposed, after discussion with the General Retrenchment Advisory Committee, the following rate of cuts on salaries :

For every rupee of the first thirty rupees of every salary or wage	3⅛
for every rupee of the next seventy rupees	6¼
for every rupee of the next four hundred rupees	7½
for every rupee of the next thousand rupees	10
for every rupee of the next fifteen hundred rupees	15
for every rupee of the remainder	20

This cut was to include all pay and such allowances as would be taken into consideration in assessing income tax—Ibid., p. 60.

[12] But provident fund bonus and gratuity were allowed on the rates of pay which would have been drawn but for the deduction—*Railway Board's Report* 1931-2, Vol. I, p. 64.

Railway Board ordered the reduction of the number of officers from 1,037 to 932, out of which 29 posts were held in abeyance. On company-managed lines 24 posts were abolished and 46 held in abeyance. Including the Railway Board's office, the total reductions amounted to 153 on state-managed and 70 on company-managed railways. As a result of the retrenchments, the services of a large number of temporary engineers were terminated. Special pay and allowances were either abolished or reduced, and railway servants of all ranks were expected to take up some additional work, or perform work of a more onerous character without additional remuneration.[13]

The number of officers in the gazetted or corresponding rank on Class I railways, compared with 1929-30, showed a reduction during 1931-2 to the extent of 9 per cent. Excepting the transportation department, all departments showed a substantial decrease. The full effects of the policies were realized only from 1933-4 onwards, when the reductions increased to 13 per cent, as compared with 1929-30. In the same year the emergency cut in pay was reduced from 10 to 5 per cent on both state-managed and company-managed railways. It was finally abolished in the succeeding year, although the financial outlook was no better than in the previous year.

New scales

In October 1933 the Railway Board, with the sanction of the Secretary of State, revised the scales of pay of new entrants to the Superior Service (Officer grades) to be introduced during the year 1934-5. The new scales represented a substantial reduction, but as they did not affect those already in service prior to 16 July 1931, the savings expected would not materialize for almost a generation. The character of the

[13] Thus, the sanctions as regards personal pay were not renewed. Acting allowances were reduced by orders to the effect that no officiating arrangements for periods less than 21 days should be made. Compensatory allowances (allowances granted to compensate for the higher cost of living in such cities as Calcutta, Bombay, Rangoon, etc.) granted to officers were reduced by 12½ per cent. Other compensatory allowances were reduced by the same percentage and when house allowances were inadmissible, by 10 per cent. Railway allowances granted to staff on relieving duty were also abolished—*Railway Board's Report* 1931-2, Vol. I, p. 63.

new monthly scales as compared with the old can be understood from the comparative figures given below for certain administrative and other posts.[14]

		Old scale	New scale
I.	*Administrative posts*		
1.	Chief engineer	Rs. 2,750-125-3,000	2,250
	Chief operating superintendent	2,750-125-3,000	2,250
	Chief commercial manager	2,500	2,000
	Chief mechanical engineer	2,500-125-2,750	2,250
	Chief accounts officer	2,200-100-2,500	2,000
2.	Deputy Agent	1,950	1,300
	Deputy chief engineer, and other deputies	1,950	1,300
II.	*Other posts*		
	Junior/asst. officer's scale (engineering)	375-50-975	350-25-500
	Senior/district officer's scale	625-2/50-1,375	Grade I 750
			,, II 850
			,, III 950

Although the effect of the new scales of pay may not be noticed for some years, there can be no doubt that the revision has been in the right direction and will in the course of years tend to correct the increases in the twenties.

II. UPPER SUBORDINATES

The subordinate staff—non-gazetted staff on state-managed railways and those on a corresponding status on company-managed railways—embrace all employees other than those included in the class of officers. Their pay may vary from workshop labourer's daily wages of a few annas to twice the starting pay of a gazetted officer. A distinction is made, however, between 'upper' subordinates and other non-gazetted employees. The former draw a scale of pay and enjoy a position higher than other subordinates.

Number and cost

The number of upper subordinates on Class I railways, excluding the Jodhpur and the N.(G)S. Railways, shown in

[14] See the *State Railway Establishment Code* for further details and for other posts.

Table 94, indicates comparatively fewer employees of this group on company-managed lines. Between 1924 and 1930 there was an increase of 18 per cent over all systems. It is also of interest to observe that the percentage increase on state-managed railways was about double that on company-managed railways. Between 1930 and 1937, there was a decrease of 13 per cent. The total number of upper subordinates on company-managed railways declined from 109 to 98 per cent, and on state-managed railways from 119 to 101 per cent.

TABLE 94. NUMBER OF UPPER SUBORDINATES ON THE CLASS I RAILWAYS, EXC. THE JODHPUR & N.(G). S. RAILWAYS*

	State-managed				*Company-managed*		
Railways	1924-5	1929-30	1936-7	Railways	1924-5	1929-30	1936-7
Burma	318	469	374	A.B.	95	99	113
E.B.	417	484	402	B.N.	889	869	830
E.I.(& O.&R.)	1,973	2,188	1,871	B.&N.W.	107	112	104
G.I.P.	1,243	1,549	1,252	B.B.&C.I.	939	1,100	941
N.W.	1,230	1,457	1,347	M.&S.M.	290	331	318
Ry. Board & other offices	..	229	230	R.&K.	25	25	19
				S.I.	296	334	269
Total	5,181	6,376	5,476	Total	2,641	2,870	2,594
Total state-managed and company-managed railways					7,822	9,246	8,070

**Railway Board's Reports*, Vol I. Revised figures wherever available.

The distribution of these employees between different departments is indicated in Table 95, but only some broad conclusions may be drawn from these statistics as there has been some interchange of staff in certain years between certain departments. During the first six years after the Separation Convention it is found that the number of upper subordinates recorded a considerable increase, particularly in the mechanical engineering, stores, Agency and engineering departments. The largest number on all Class I railways was maintained during the two years 1929-31, and during this period the highest levels were reached. The peak figure was, of course, in 1929-30. Between 1929-30 and 1936-7 came about a great decrease which gradually reduced the strength from 9,246 on 31 March 1930 to 8,070 on 31 March 1937, which represented the lowest figure for upper subordinates since 1925-6.

Turning from the number of this class of non-gazetted employees to their cost, it will be recalled that an indication

TABLE 95. NUMBER OF UPPER SUBORDINATES EMPLOYED BY DEPARTMENTS*

(CLASS I RAILWAYS)

Departments	1924-5	1925-6	1926-7	1927-8	1928-9	1929-30
Agency	82	85	100	98	104	109
Accounts	..	..	..	..	..	479
Engineering	1,325	1,415	1,525	1,520	1,557	1,528
Transportation	2,523	2,222	2,150	2,205	2,335	2,480
Commercial‡	162	169	145†	162†	158	164
Mechanical engineering	2,699	3,224	3,291	3,335	3,426	3,488
Stores department	138	151	154	154	173	175
Other departments	893	907	933	1,012	1,046	594
Railway Board and other offices	..	..	122	131	218	229
Total	7,822	8,173	8,420	8,617	9,017	9,246

Departments	1930-1	1931-2	1932-3	1933-4	1934-5	1935-6	1936-7
Agency	114	107	96	94	100	100	96
Accounts	468	448	440	451	413	418	409
Engineering	1,456	1,356	1,287	1,225	1,190	1,188	1,180
Transportation	2,379	2,257	2,175	2,099	2,137	2,107	2,025
Commercial	149	139	135	141	119	121	178
Mechanical engineering	3,489	3,305	3,320	3,243	3,237	3,172	3,241
Stores departments	179	179	173	177	171	165	165
Other departments	603	583	575	610	595	594	546
Railway Board and other offices	219	241	214	205	216	226	230
Total	9,056	8,685	8,415	8,245	8,178	8,091	8,070

* *Railway Board's Reports*, Vol. I. The figures against certain heads left blank for certain years are not available and are included in the figures of 'other departments'.

† R.&K. has included also Transportation under this head.

‡ The cost of this department on the B.N., B.B.&C.I., Burma, E.B., M.&S.M. and R.&K. is included under Transportation.

has already been given. The scales of pay of upper subordinates were revised in 1920. The extent of increase in 1920 is disclosed by the figures given in Table 92. A general idea as to the subsequent changes up to the orders of 1933 may be formed from the following scales of pay of staff in the office of the Railway Board. The scale under A refers to those who were in permanent service prior to 1 November 1924; the scale under B to those

who entered service after that date, but before 16 July 1931 ; and the scale under C to those who joined on or after 16 July 1931.

SCALES OF PAY OF THE RAILWAY BOARD, UPPER SUBORDINATE STAFF*

	A	B	C
Ministerial establishment :	200-15-365-500	180-15-4 50	140-10-310 (E.B.) at Rs. 280
Assistants, 1st Division	375-25-500		
Clerks, 2nd Division	100-8-300 300-25-350	100-8-260	80-4-120-5-200
Stenographers	175-9-400	150-10-300	125-5-180-10-300

* *State Railway Establishment Code.* E. B. means efficiency bar.

There were similar changes in the pay of upper subordinates in the attached offices of the Railway Board and in different departments of the individual railway administrations. It is not possible to refer to them in the brief survey that is attempted here. The instance just given affords a fair indication of the nature of the decrease in the scales of pay from 1931 onwards. Here also the interests of existing employees have been protected, and only newly recruited staff would come under the operation of the lower scales. As with employees of gazetted rank, the effect of these changes in the cost of staff will be seen only gradually, when with the natural wastage of the older staff the recently appointed employees on lower scales take their place.

III. LOWER SUBORDINATE AND OTHER NON-GAZETTED STAFF

Employees not coming under the two categories already considered represent lower subordinates and other non-gazetted staff. The total number of this group is not stated separately, and can only be arrived at by deducting the number of officers and upper subordinates from the total staff. The magnitude of the numbers involved in this group may be judged from the figures given below. This group constitutes the bulk of the railway staff. It would have been of interest to separate lower subordinates from the other non-gazetted staff but the information, unfortunately, is not available for the period under review. A general idea as to the proportions of the

three groups is afforded by certain comparative figures prepared by the Railway Board in 1935-6, according to which as shown below lower subordinates accounted for 384,000 out of a total of 613,000, the balance being under labourers and inferior servants.[15] The cost of the lower subordinates is not available on any satisfactory basis.

TABLE 96. STRENGTH AND COST OF LOWER SUBORDINATE, LABOUR AND INFERIOR STAFF*

(*Rs. in crores*)

	1913-4		1923-4		1935-6	
	No.	Rs.	No.	Rs.	No.	Rs.
Lower subordinates	298,562	7·36	317,227	14·94	383,868	20·03
Labourers	157,001	1·47	177,816	3·13	154,290	3·98
Inferior servants	56,699	0·61	67,678	1·33	65,386	1·39
Total all employees	558,406	12·63	632,905	27·00	612,926	31·79

* *Public Accounts Committee Report* 1935-6, Vol. I, Part II, pp. 54-5. Figures relate to the 11 Class I railways excluding the Burma.

A different type of analysis was adopted by the Royal Commission on Labour in 1931 on the basis of information supplied by the railway administrations. But as the figures included upper subordinates also, the information is not helpful in defining the status and wages of the remaining non-gazetted employees. The limitations of the statistical data thus render it impossible to undertake anything more than an examination of the information collected for, and during, particular enquiries. It will be seen from the figures of the lower category of the subordinate staff shown in Table 92 that the average cost increased during 1921-9.

Minimum wage

From 1930 onwards, due largely to the growing influence of organized labour, the recommendations of the Royal Commission on Labour, and the policy of Government to improve labour conditions, action was taken to liberalize the scales of wages and the conditions of work. Prior to April 1929, the investigations made were of a general nature on which it was not possible to build up a scheme of revision. Early in 1930 an

[15] *Public Accounts Committee Report* 1935-6, Vol. I, Part II, p. 55.

attempt was made to revise the scales on the E.B. and G.I.P. Railways on the basis of a minimum wage. An increase in the wages of lower-paid employees was sanctioned to these administrations with effect from April 1930. The estimated extra recurring cost was Rs. 4·5 lakhs and Rs. 5 lakhs, respectively, for the E.B. and G.I.P., though the immediate cost was greater on the latter, namely, Rs. 8 lakhs. The A.B. also introduced, on the lines of the E.B., revised scales of pay for its subordinate staff in the traffic, locomotive, engineering and medical departments, at an estimated increased expenditure of Rs. 1·18 lakhs, of which 83 per cent was on account of increases in the lower services. In July 1930, the M.&S.M. had its proposals for bringing the wages of lower grades into line with those on state-managed railways sanctioned at an extra cost of Rs. 4 lakhs. A further revision of the pay of its clerical establishment was also sanctioned three months later at an estimated annual cost of Rs. 67,000. On the E.I., an investigation on similar lines was made in 1930, and in September of that year its proposals were given effect to at an estimated cost of Rs. 11 lakhs *per annum*. Similar enquiries were also instituted on the N.W. and it was found that the wages did not call for improvement.[16]

The latest revision in the scales of pay of low-paid staff introduced by these attempts effected a further improvement. It is impossible to refer to the changes in detail in the wages of all the different classes of employees. The results may best be indicated by comparing the higher scales adopted with the older scales for certain classes of employees on the E.I.

BLOCK SIGNAL WORKSHOP STAFF, HOWRAH

	Old		*New*	
	Minimum	maximum	Minimum	Maximum
Fitter	0 8 0 p.d.	Rs. 90 p.m.	As. 13-1-16-1½-24 p.d.	Rs. 52-2½-67 p.m.
Driller	1 2 0 ,,	1 7 0 p.d.	,,	As. 13-1-16-1½-24 p.d.
Turner	0 15 0 ,,	2 1 0 ,,	,,	As. 32-1½-40 ,,
Moulder	1 0 0 ,,	1 14 0 ,,	,,	As. 24-1½-32 ,,
Engraver	1 0 0 ,,	2 6 0 ,,	,,	As. 32-1½-40 ,,
Carpenter	0 12 0 ,,	54 p.m.	12-1-16-1½-20	Rs. 40-2½-55 p.m.
,, boy	0 9 0 ,,	0 15 0 p.d.	7-1-11	

* p.m. *per mensem*. p.d. *per diem*.

[16] *Railway Board's Reports* 1930-2.

Hours of Employment Regulations

In 1930 another great scheme also came to fruition. This was the application of the Washington and Geneva Conventions prescribing respectively, a 60-hour week and a weekly rest day in industrial undertakings. Although they were ratified by the Government of India prior to 1924, their application to Indian railways presented difficulties which had already been experienced by transport services in other countries. They were accentuated by religious and social customs in India. The Indian Railway Conference Association, after considering the conventions, framed rules, but they were exhaustively re-examined in 1929 with a view to specifying the branches of railway services to which they were to be applied. An enabling bill authorizing the Governor-General-in-Council to make rules was introduced in September 1929 and, after emerging from the Select Committee, was passed by the Central Legislature early in 1930. These rules, when finally framed, assumed a statutory character when published in the *Gazette of India* in January 1931.[17]

The new rules took effect on the N.W. and E.I. on 1 April 1930, and a year later on the E.B. and G.I.P. The change brought some 400,000 out of 700,000 railway workers on Class I railways within the scope of the Hours of Employment Regulations. The increase in working expenses as a result of the application of these regulations was estimated at about Rs. 45 lakhs per annum, on account of the additional staff of 10,000 needed. The policy of extending the rules to other railways suffered an interruption owing to the beginning of the depression and the pressure for economy. The Railway Retrenchment Sub-Committee themselves recommended that the policy be stopped with the first two railways, but the Government of India, in view of their international obligations, decided to stop only after extending it to two more systems. The question was revived in 1935-6, when the Hours of Employment Regulations were given statutory effect on two

[17] Ibid.

more railways, the B.B.&C.I. and M.&S.M. This brought some 71 per cent of the railway staff within the benefits of the new legislation. The remaining railways were brought in line during the next five years.

LEAVE RULES

The strength of staff maintained and, therefore, its cost are influenced by the policy followed as regards the grant of leave on full or partial pay. Thus, as was mentioned in connexion with the pay and strength of officers, there came to be maintained a 20 per cent additional strength to keep a reserve of 16 per cent of officers proceeding on leave and 4 per cent for officers sent on deputation. The state-managed railways are generally subject to the rules regarding leave adopted by the Government of India under their Fundamental Rules applicable to other Government departments. According to these rules, an employee of non-Asiatic domicile earned leave on full pay at the rate of 5/22nds of duty. An employee of Asiatic domicile was allowed a slightly lower rate, namely, 2/11ths of duty. An employee, if he served for, say, 29 years would have due to him in all seven years of leave, if of non-Asiatic domicile, or six years, if of Asiatic domicile. Of this total, not more than three years could be on full pay in the case of the former, and two years in the case of the latter, extensible, however, to three on medical grounds, or out of India. Finally, leave not due might also be given in advance of being earned for a period extending up to six months in all without medical certificate, or for longer periods with one.

On company-managed railways rules were made on similar lines under the Fundamental Leave Rules for the guidance of railway companies, sanctioned by the Secretary of State as early as 1901. These rules group railway employees as either Europeans or non-Europeans. They were not so liberal as those on state-managed railways.[18]

[18] *Memorandum by the Railway Board for the Royal Commission on Labour*, pp. 145-6.

There were considerable differences on the individual administrations. Thus on the N.W. leave to lower grades of staff was limited to 60 days sick leave on half pay in a calendar year besides 15 days casual leave on full pay, while employees in higher grades got their leave under the Fundamental Rules. Anomalies had also crept into the old company-managed railways acquired by the State. Employees of the E.I. and G.I.P., for instance, whose status in this respect was not disturbed, continued to get their leave under the old company rules while those recruited after the State acquisition got theirs under the Fundamental Rules. Between companies themselves there were differences, such as a limit of three months on the B.B.&C.I. and of four months on the B.N. for privilege leave of subordinate staff.

The practice varied from those just outlined in the case of workshop staff and inferior services. Labourers employed in workshops, generally on daily rates of wages, were given the concession of a limited number of workshop holidays with full pay or of casual leave in lieu of holidays after they had completed one year service. The actual number of days varied from 6 on the A.B. Railway to 20 on the E.B. Railway. A more generous standard was adopted for monthly rated employees in receipt of Rs. 21 and over, in the Jamalpur workshops of the E.I. Railway.

Revised rules of 1930

On 1 September 1929, an attempt was made to extend leave privileges to workshop employees of three years service in the Lillooah Workshops of the E.I. by converting their daily wages to a monthly wage at the rate of 26 times the daily rates.

The situation of other employees in inferior service was not satisfactory. Labourers employed in sheds, train-examining stations, on daily or monthly rates of pay, station menials and others were treated on the same footing as workshop employees. But in lieu of holidays they were given 15 days casual leave in a calendar year. On state-managed railways, several classes of monthly rated employees were

allowed to earn leave according to the Fundamental Rules, but it was subject to the condition that no extra cost should be imposed on the State.

On a review of the position, the Railway Board concluded :

(1) that considering the climatic and other conditions of working in India, the leave terms applicable to workshops and other labour call for a certain measure of improvement in the case of employees who have settled down in the Railway Department and have completed say, three years service ;

(2) that other men in inferior service might with advantage be treated on a par with workshop and other labour, the 'no-extra-cost' conditions being removed ;

(3) that the leave terms applicable to superior and subordinate staff are over-liberal. In fact, the majority of railway servants avail themselves only of the leave they can get on full pay, including casual leave, and if such leave is not due, a limited amount of leave on half-pay in the event of sickness or on special occasions ;

(4) that the leave rules on company-managed railways require recasting, specially in the direction of removing racial discrimination.

The revised rules, which came into force on all the state-managed railways on 1 April 1930, attempted to bring leave rules into better conformity with the needs of a commercial department by making them simpler and obviating elaborate calculations of leave, leave salary and leave accounts; to remove racial discrimination which had persisted on the E.I., G.I.P., and Burma after State acquisition ; and to allow what the Railway Board regard as a reasonable amount of leave privilege to all classes of railway employees without making its grant dependent on the 'no-extra-cost' condition. The Secretary of State sanctioned the Railway Board's recommendations being extended to the company-managed railways and they took effect on 1 October 1931.[19]

Other changes

There were other problems which were no less important, and the efforts of the railway unions were directed towards

[19] The leave privileges granted were : for continuous service of more than 3 years, and less than 10 years, 10 days leave on full pay per calendar year ; for a period extending up to 10 years and less than 20 years, 15 days leave on full pay per calendar year ; and for a period exceeding 20 years, 20 days full pay. Leave on medical certificate on half pay up to 30 days per calendar year and 120 days in all.

finding a solution. There was, for instance, a widespread feeling of instability of service arising from a fear of dismissal or wrongful discharge. Many of the strikes which occurred during the post-war period were connected directly or indirectly with this factor. Steps were taken in 1930 to improve the security of tenure, by providing for a right of appeal and other measures generally safeguarding the interests of non-gazetted staff.

Another important reform was the speeding up of payment of wages within 14 days of the close of the month to which they relate. Inordinate delays in payment, which formed one of the grievances of labour, were sought to be removed by special measures taken for the purpose. The Railway Board also formulated a definite policy of granting financial assistance to lower-paid staff for the education of their children at boarding schools which were away from the employees' stations. Similarly, facilities to relieve indebtedness through grants from the staff benefit and other funds were also extended.

Reference should also be made to the attempt of railways since 1924, to improve and maintain the efficiency of the staff by the establishment of technical or area schools to provide regular or refresher courses of instruction and training for officers and subordinates on various aspects of railway working. Although the more ambitious Staff College had to be closed shortly after it was opened, the other institutions carried on their valuable work uninterrupted.[20]

DEPRESSION AND RETRENCHMENT OF STAFF

While measures for the amelioration of the service conditions of lower-paid staff were being elaborated and introduced gradually, the effect of the depression in 1931 and the financial stringency rendered it impossible to continue them. There was a spasmodic contraction in the volume of railway employment. Railway administrations had to cut down costs

[20] For a more detailed account of these changes, see the chapter on Staff in *Railway Board's Reports* from 1929-30 onwards.

by reduction in materials and stores, and by operating railway services with a reduced staff in the latter part of 1930 itself. Certain administrations started on a policy of discharges and demotions of their employees. The number of staff on 11 Class I railways decreased from 728,821 on 31 March 1930, to 690,277 on 31 March 1931, a reduction of 38,544. Of the number in 1931, 40,502 were discharged and they consisted of 32,655 permanent employees and 7,847 temporary employees. Another 4,392 were demoted. Before these retrenchments were carried out, the All-India Railwaymen's Federation could not get the Railway Board to agree to suspend or cancel their measures till an enquiry as to their necessity, extent and character was completed. The Federation asked for a Court of Enquiry under the Trades Disputes Act 1929, which was appointed on 13 August 1931. The Railway Board stopped on 7 July 1931, further retrenchment of staff till October 1931. The Court, after enquiry, held that the evidence did not support the suggestion of improper conditions of work to the staff not retrenched, and was satisfied that in making retrenchment due regard had been paid to the stoppage of recruitment, normal wastage and retirement of staff taking their gratuity and provident fund. Except for the consideration given to a few hard cases, the policy of retrenchment was generally approved.[21]

Railway employment thus became a contracting spiral during the depression. We may indicate the effects of the retrenchment of staff and stoppage of recruitment by examining the statistics of the number and cost of non-gazetted staff. Including upper subordinates, the non-gazetted staff on Class I railways declined in numbers as compared with 1929-30, by 5 per cent in 1930-1, and by 12 per cent in 1931-2. A further reduction making a total of 16 per cent was carried out in 1933-4, the year representing the lowest figure since 1930. During the next three years, the non-gazetted staff was only 84·5 per cent of the pre-depression year. The decrease

[21] *Railway Board's Report* 1931-2, Vol. I, pp. 64-5.

was generally greater on state-managed lines. With the exception of the B.B.&C.I., which had a percentage figure more or less similar to the total average, all company-managed railways had a non-gazetted staff of over 90 per cent of 1929-30. There was on the A.B. even an increase by 5 per cent.

TABLE 97. TOTAL NUMBER AND COST OF NON-GAZETTED STAF

1929-37

(CLASS I RAILWAYS)

(*Rs. in crores*)

Year	Number	Percent of 1929-30	Cost Rs.	Percent % of 1929-30
1929-30	797,258	100	36·09	100
1930-1	758,975	95	35·76	99
1931-2	705,398	88	33·08	92
1932-3	679,878	85	31·28	87
1933-4	666,641	84	31·89	88
1934-5	670,495	84	32·24	89
1935-6	676,156	85	33·10	92
1936-7	673,432	84	33·36	92

* *Railway Board's Reports*, Vol. I. The figures represent open line and construction staff, permanent and temporary.

Turning from the strength of staff to their cost, it will be seen that the percentages indicate a lower rate of increase. Thus, even during 1933-4, when the number of staff was 84 per cent of 1929-30, the cost was 88 per cent on all Class I railways. During 1936-7, the number was 84 per cent, while the cost was 92 per cent. Examining the detailed figures[22] the discrepancy is shown even more clearly. The difference in the general picture presented by state-managed and company-managed railways may be mentioned. Even with a diminished staff, cost steadily increased on the M.&S.M. and A.B. Both as regards staff and their cost, the state-managed railways showed a larger percentage of reduction.

Rise in cost of staff

The one redeeming feature in this period of discharges and wage-cuts, is the maintenance of a liberal labour policy and the steady introduction, soon after the initial phase of

[22] The detailed figures are given in the appendix.

the depression, of measures designed to improve wages and working conditions. The financial effect of these measures was to increase the total wages bill. Contrary to the trend on some foreign railways during the depression period, the average wage on Indian railways increased. As may be seen from the figures given below, the average cost of all staff, including allowances, overtime, etc., per head *per diem*, increased from Rs. 1·28 in 1924-5 to Rs. 1·36 in 1929-30 and to Rs. 1·48 in 1936-7. Excluding the cost of the gazetted staff—for which separate statistics are available only for recent years—the average cost for other employees increased from Rs. 1·24 in 1929-30 to Rs. 1·36 in 1936-7. An increase is also noticeable in the cost of gazetted staff, due probably to the effects of the time-scales of the older employees not coming within the new scales of 1934. But the difference between the average cost of gazetted staff and of other employees is striking.[23]

TABLE 98. COMPARATIVE COSTS OF STAFF*
(CLASS I RAILWAYS)

(In rupees per head *per diem*)

	Gazetted staff	Non-gazetted staff	All employees
1924-5	..	..	1·28
1929-30	46·82	1·24	1·36
1930-1	44·49	1·29	1·41
1931-2	46·65	1·28	1·41
1932-3	43·90	1·26	1·38
1933-4	47·02	1·31	1·44
1934-5	45·19	1·32	1·44
1935-6	47·47	1·34	1·47
1936-7	47·27	1·36	1·48

* Calculated from figures taken from *Railway Board's Reports*. Revised figures used when available.

Some differences are to be observed in the average wage levels on state-managed and company-managed railways. The average daily cost per employee on the former during 1924-37 increased as shown in Table 99, from Rs. 1·38 to Rs. 1·53.

[23] On the American railways, 'executives, officials and staff assistants'—who may be compared to the gazetted or officer staff in India—received the highest average pay *per diem* of $17·49 in 1936, as compared with the average of $8·35 for all railway employees. The corresponding figures for the gazetted officer and the average employee on Indian railways in 1936-7 were Rs. 47·27 and Rs. 1·48 respectively.

TABLE 99. COMPARATIVE COSTS OF STAFF ON STATE AND COMPANY-MANAGED RAILWAYS*

(In rupees *per annum*)

State-managed				*Company-managed*			
Railways	1924-5	1929-30	1936-7	Railways	1924-5	1929-30	1936-
Burma	628	585	576	A.B.	313	442	460
E.B.	435	469	495	B.N.	442	472	528
E.I.	396	464	529	B.B.&C.I.	583	607	655
G.I.P.	554	541	588	M.&S.M.	444	453	513
N.W.	510	545	612	S.I.	515	497	499
				B.&N.W.†	258	278	313
				R.&K.†	271	275	313
Average *per diem*	1·38	1·43	1·53		1·26	1·35	1·45

* Calculated from figures taken from *Railway Board's Reports*. Revised figures used when available.

† Excluded in the average

On company-managed railways, the average cost per employee started from a lower level, Rs. 1·26; it rose to Rs. 1·35 in 1929-30, a much lower level than on state-managed lines, and again to Rs. 1·45 in 1936-7. If the increase on the company lines during the pre-depression period is taken as an attempt to overtake the lag as compared with the State lines, the subsequent increase has certainly been lower than on the latter.

A comparison of the cost of staff with the levels of wages prevailing in other organized industries would be interesting, but lack of adequate data renders the attempt impossible. Information relating to the more important industries for certain years in a limited number of centres points to considerable variations from group to group. But a comparison of the wage rates in the Bombay textile industry and the Calcutta Jute Mills discloses a higher level on railways.[24] A substantial proportion of the industrial wages may have to be discounted on account of the higher cost of living in the bigger centres, which is escaped by a large part of the railway staff distributed all over the line.

[24] According to the Bombay Wage Census (1934), the average wage for men in all engineering and 'common' occupations, excluding unskilled labourers (all factories) amounted to Rs. 41-8-5 in Bombay City, and Rs. 43-2-11 in Bombay Suburban, decreasing to Rs. 22-1-4 (Sholapur City) in the interior. Among the Calcutta Jute Mills, wages averaged Rs. 40 per month. Jather & Beri, *Indian Economics*, Vol, II, p. 107.

In addition to the salaries or wages and leave privileges, railway staff also enjoy certain pecuniary allowances and perquisites. The allowances comprise officiating and duty allowances in consideration of additional or more responsible work; local allowances in consideration of the expensiveness or unhealthiness of residence in particular localities; travelling allowances; allowances to running staff on a milage or overtime basis for working on holidays; and miscellaneous allowances such as relieving allowances, grain compensation allowances, etc. Perquisites partake of the character of additional emoluments in kind. They are principally free passes and kindred privileges, uniform, free rations as on the Nushki Extension Railway, free quarters or allowances in lieu thereof, free medical attendance, assistance towards education of children, miscellaneous concessions such as the selling of fuel, scrap materials, petty stores, etc., at reduced rates. It is not easy to convert the value of these perquisites into a financial equivalent, but there can be no doubt that their existence substantially enhances the attraction of employment on railways as against industrial undertakings.

We may conclude this chapter with a brief assessment of the policy followed with reference to the cost of staff. The elasticity and freedom in the administration of personnel matters so essential to a commercial undertaking were singularly absent. Railways disclosed the same features as other departments of the Government of India as regards salary scales and other privileges. What may strike foreign observers as even more surprising is that company-managed railways were no better in this respect. Whether it was the scales of pay or leave reserves, the company railways tended to fall in line with the State railways. Thus not only the Lee Concessions, but also the pre-dating of the concessions were faithfully copied on company-managed railways. If scales of pay and other emoluments were proper and reasonable as compared with the standards in private industry, the uniformity is an undoubted advantage: the eccentricity of particular managements ought

not to be visited on the staff to their detriment. But the influence of Government on these questions was such that not even the Railway Board—not to mention the individual administrations—had any freedom to decide questions on their merits. The restoration of the salary cuts in 1934 affords an instance in point. That restoration was made not on grounds of improved railway revenues—which was the deciding factor—but on the plea that as it was being done for all employees of the civil departments, Government would not exclude railway servants from the benefit. Government was, of course, generous in taking this view, but it was a decision imposed on railways, though their financial position did not warrant it. Again, the anomaly of the higher salary scales was exposed during the depression, but this would not have been discovered so late had it not been for the imposition of State scales and procedures on railways.

As regards lower subordinates and inferior staff, the policy of the State has been on the whole considerate. Government initiated improvements in wage scales, which were extended to the company lines also. It is doubtful if the reforms carried out since 1930, during the period of the depression would have been effected without friction if all the railways were operated by private undertakings. The fact that Indian railways were owned by the State and that the rights of the companies were limited by their contracts was a distinct advantage. Many of these changes were desirable, some of them indeed long overdue, and the fact that the financial difficulties of railways were not allowed to stand in their way reflects credit on the authorities concerned.

But these reflections should not obscure the danger inherent in the system: that state management is generally powerless to control wages before a crisis occurs. The trend of the cost of superior staff has been upward, even during the later years of the depression. It is when state management attempts to keep down or reduce wages that its weakness is likely to be exposed.

CHAPTER X

OPERATING EFFICIENCY

In preceding chapters attention has been focussed mainly on the financial aspects of working. Financial results are what primarily interest those concerned in the administration of our railways, but in the last resort they are largely determined by the efficiency of operation. Other things being equal, a higher standard of efficiency implies that transportation is being conducted with less labour and expense and, therefore, at a cheaper cost.

Improvement in railway operation may be the result of several factors. Some of them are connected with physical equipment, more intensive utilization of plant and continued effort towards elimination of waste. They may be measured by the use of statistical units. There are others, consisting of intangible elements, which do not lend themselves to measurement. Such, for instance, are the satisfaction of the public, the comfort and convenience of passengers, the condition in which consignments arrive at their destination, and prompt service. These factors, although as important as the others, are not capable of statistical appraisal. No less significant is the human factor. As Dr. J. H. Parmelee sums up: 'Advances in efficiency are in part the result of general improvement in physical plant, brought by the investment of large sums of new capital so as to make improved service and greater economy of operation possible. In part they result

from more effective organization of the personnel and from the combined effort of both management and men to render adequate, satisfactory and prompt service.'[1]

In an attempt to appraise the efficiency of operation, one must take into account the various aspects of working in connexion with passenger and goods traffic. The different phases of operation may be broadly grouped as follows :

(*a*) physical condition of equipment ;
(*b*) utilization of rolling-stock ;
(*c*) speed of transportation ;
(*d*) fuel consumption ; and
(*e*) ratio of productive to indirectly productive operation.

We may now proceed to review the character of railway operation under these heads during the period 1924-37.

PHYSICAL CONDITION OF EQUIPMENT

The physical assets of railways were improved and modernized throughout as a result of the large capital expenditure during the twenties. The permanent way, as we have seen already, was strengthened and other fixed assets such as bridges, banks, etc., were brought up to a higher standard. Rolling-stock was also improved. But as the permanent way is an irrevocable investment, its utility can only be measured by the extent to which it is used by the mobile equipment. We may, therefore, turn to the mobile equipment, consisting of locomotives, coaching vehicles and goods wagons.

Serviceable stock

It is of the greatest importance for a railway to ensure that as large a number as possible of the total stock is available for use. In actual practice, however, a certain number is always under or awaiting repairs in the shops or in sick lines. In Table 100 the statistics of the percentages of serviceable locomotives, coaching vehicles and wagons to the total stock on Class I railways for 1924-37 are given. The number of

[1] J. H. Parmelee, *The Modern Railway*, p. 216.

locomotives on the line, excluding those in mechanical workshops, sick lines and transportation workshops, shows a material improvement during the period 1924-30. The proportion of serviceable locomotives rose by 4 per cent on the broad gauge, and 5 per cent on the metre and narrow gauges. During the period of the depression the improvement was interrupted. The number on the broad gauge touched the level of 83 per cent during 1932-5, after which it dropped to 82 per cent. On the metre gauge the percentage increased from 86 in 1931-2 to 87 in 1935-7. As compared with 1924-5, the proportion of serviceable locomotives on the broad, metre and narrow gauges in 1930-7 was higher by 5, 8 and 5 per cent, respectively.

TABLE 100. PERCENTAGE OF SERVICEABLE LOCOMOTIVES TO TOTAL STOCK*

(CLASS I RAILWAYS)

Year	Broad	Metre	Narrow	Year	Broad	Metre	Narrow
1924-5	78	79	77	1930-1	81	84	82
1925-6	77	81	78	1931-2	82	86	82
1926-7	78	81	77	1932-3	83	86	81
1927-8	79	82	80	1933-4	83	86	82
1928-9	80	82	81	1934-5	83	86	81
1929-30	81	84	82	1935-6	82	87	82
				1936-7	82	87	81

**Railway Board's Reports*, Vol. II.

Coaching vehicles for our present purposes may be grouped into passenger carriages and other coaching vehicles. In Table 101 the statistics of serviceable stock are shown in percentages to the total on the line. The percentage of serviceable passenger carriages increased in 1929-30 by 7 on the broad gauge, 3 on the metre gauge and 3 on the narrow gauge. Except on the metre gauge, where there was a further improvement of 2, there has been a decline since 1930. In 1936-7 the serviceable carriages decreased to 88 per cent on the broad gauge, and to 90 per cent on the narrow gauge.

Other coaching vehicles showed less improvement in 1929-30. Metre gauge vehicles were up by 3 per cent, an improvement generally continued to 1937. There was a deterioration to a small extent as regards broad gauge vehicles and to a larger extent as regards narrow gauge vehicles.

TABLE 101. PERCENTAGE SERVICEABLE COACHING VEHICLES*

(CLASS I RAILWAYS)

(a) Passenger carriages

Year	Broad	Metre	Narrow	Year	Broad	Metre	Narrow
1924-5	83	87	91	1930-1	90	91	94
1925-6	84	88	91	1931-2	90	92	93
1926-7	87	89	90	1932-3	89	92	93
1927-8	89	90	92	1933-4	89	92	93
1928-9	89	90	94	1934-5	88	91	91*
1929-30	90	90	94	1935-6	88	92	89
				1936-7	88	92	90

(b) Other coaching vehicles

Year	Broad	Metre	Narrow	Year	Broad	Metre	Narrow
1924-5	88	90	91	1930-1	91	93	89
1925-6	88	89	92	1931-2	91	93	93
1926-7	90	91	91	1932-3	91	92	93
1927-8	92	93	91	1933-4	89	93	90
1928-9	92	92	91	1934-5	89	93	84
1929-30	92	93	91	1935-6	90	93	77
				1936-7	89	93	84

**Railway Board's Reports*, Vol. II.

The best record is that presented by goods wagons. In 1924-5 the serviceable wagons stood at 93 per cent on the broad gauge, 94 per cent on the metre gauge and 97 per cent on the narrow gauge. By 1929-30 there was an increase of 1 per cent on the broad and metre gauges. During the period 1930-7 there was a decrease on the former to 87 per cent in 1932-3 and a slight increase to 91 per cent in 1936-7. The metre gauge wagons continued the improvement and reached a percentage of 97. The narrow gauge wagons showed no improvement in 1929-30 and recorded a decrease of 2 per cent in 1936-7.

TABLE 102. PERCENTAGE SERVICEABLE WAGONS*

(in 4-wheelers)

(CLASS I RAILWAYS)

Year	Broad	Metre	Narrow	Year	Broad	Metre	Narrow
1924-5	93	94	97	1930-1	94	96	97
1925-6	93	93	96	1931-2	92	97	94
1926-7	94	94	96	1932-3	87	97	96
1927-8	95	96	96	1933-4	89	98	96
1928-9	93	96	97	1934-5	91	97	95
1929-30	94	95	97	1935-6	90	97	95
				1936-7	91	97	95

**Railway Board's Reports*, Vol. II.

On the whole, the position with regard to locomotives was more satisfactory in its steady rate of improvement. But the Wedgwood Committee, comparing the figures with those of the British and South African railways, observed that the percentage of stock awaiting repairs was high and that even when a reduction was recorded there was room for further improvement.

ROLLING STOCK UTILIZATION

We may now turn to the utilization of railway rolling-stock. As part of the equipment is used exclusively on passenger service and part for goods service we may treat them separately.

The motive power is supplied by the locomotives and a measure of the work done by them is provided by the average distance travelled by an engine per day. The engine miles per engine day for passenger and goods locomotives indicate the work turned out by them.[2] The performance of passenger locomotives, as shown in Table 103, discloses an increase in the average milage. During 1924-30, the additional distance per passenger locomotive was 25 miles, or an increase of 21 per cent, on the broad gauge; 22 miles, or 21 per cent, on the metre gauge; and 25 miles, or 36 per cent, on the narrow gauge.

TABLE 103. ENGINE MILES PER PASSENGER ENGINE PER DAY*
(CLASS I RAILWAYS)

Year	Broad	Metre	Narrow	Year	Broad	Metre	Narrow
1924-5	119	104	69	1930-1	139	121	91
1925-6	128	112	82	1931-2	138	124	96
1926-7	137	113	74	1932-3	138	124	87
1927-8	139	120	81	1933-4	138	125	100
1928-9	142	126	83	1934-5	143	127	95
1929-30	144	126	94	1935-6	149	127	94
				1936-7	152	129	98

* *Railway Board's Reports*, Vol. II.

There was a decrease in the average during 1930-3, and in the succeeding four years, the earlier records were broken and in 1936-7 engine milage was, as compared with 1924-5, 28, 24 and 42 per cent higher on the broad, metre and narrow gauges, respectively.

[2] The performance of mixed trains is not included in the table.

The situation with regard to goods engines, as may be judged from Table 104, indicates a remarkable improvement on the broad gauge from 82 to 96 miles in 1936-7, an advance of 17 per cent. The performance of the metre gauge locomotives has not been quite so satisfactory. Although a higher average milage of 94 was obtained in 1924-5, there was a fluctuation from 90 to 94. But an increase to 98 has followed a steady upward trend since 1930. The narrow gauge locomotives were more uncertain in their average milage and indicate a general decline, from 81 to 68.

TABLE 104. ENGINE MILES PER GOODS ENGINE PER DAY*

(CLASS I RAILWAYS)

Year	Broad	Metre	Narrow	Year	Broad	Metre	Narrow
1924-5	82	94	78	1930-1	88	91	72
1925-6	84	94	81	1931-2	89	92	72
1926-7	85	92	78	1932-3	91	93	63
1927-8	86	95	73	1933-4	95	94	66
1928-9	87	90	81	1934-5	95	96	69
1929-30	88	94	73	1935-6	95	95	70
				1936-7	96	98	68

**Railway Board's Reports*, Vol. II.

The engine milage must bear a definite relation to the work performed, namely, the train miles, wagon miles and ton miles. As the running of a locomotive implies expense, it is important to observe that no more than the necessary amount of milage is operated. The train is the freight unit for transportation and the train milage measures the amount of work done in terms of trains operated. As the purpose of the train is to haul freight, the weight of the train as such affords a standard of the work done by it. 'Gross tons per goods train' is an important statistic to check the efficiency of goods train working. The greater the amount of tonnage carried the lower will be the final cost of moving a ton mile. It is also necessary to consider, along with this statistic, the 'net tons per goods train' representing the revenue or remunerative load, which excludes the weight of the locomotives, wagons, etc.

The trend of tonnage per goods train may be seen from Table 105. On the broad gauge the gross tonnage per goods

train moved from 861 in 1924-5 to 943 in 1935-6, an increase of 10 per cent. The net tonnage per goods train on the broad gauge does not show anything like the same improvement, and averaged between 372 and 393. The maintenance of the same or even a higher record of goods train performance, particularly during the depression in which traffic had shrunk, to abnormally low levels, implies that the work connected with the operation of goods trains was done with increasing efficiency. But taking the net tonnage along with the gross, per goods train, there was a larger proportion of non-revenue tonnage. But if account is taken of the fact that during the depression the very maintenance of earlier levels may be rendered difficult, the results in the light of circumstances might be deemed satisfactory.

TABLE 105. GROSS AND NET TONNAGE PER GOODS TRAIN*

(CLASS I RAILWAYS)

	Broad		Metre		Narrow	
Year	Gross	Net	Gross	Net	Gross	Net
1924-5	861	380	381	163	197	65
1925-6	869	372	376	156	190	60
1926-7	884	381	372	157	184	56
1927-8	907	390	386	164	181	54
1928-9	902	383	382	161	179	54
1929-30	906	386	383	157	169	49
1930-1	914	385	394	160	170	48
1931-2	923	389	400	166	164	44
1932-3	917	380	393	160	163	44
1933-4	933	391	410	168	166	47
1934-5	931	391	422	174	168	46
1935-6	943	393	417	171	165	45
1936-7	940	389	424	175	168	48

* *Railway Board's Reports*, Vol. II.

Tonnage per goods train on the metre gauge presents a slightly different picture. During 1924-30, against an increase of 1 per cent in the gross tonnage, there was a decrease of 4 per cent in the net tonnage. During succeeding years the position as regards both gross and net tonnage improved. In 1936-7 there was, against an increase of 11 per cent in the gross tonnage, an increase of 7 per cent in the net weight. On the narrow gauge, the trend showed a decrease in both gross and net tonnage.

There are certain other aspects to be considered in connexion with the operation of goods trains. The efficiency of working a goods train starts with the loading of the wagons. The paying freight per wagon indicates the utilization of the wagons and their productivity. The movement of the wagons and the ton miles effected by them represent the transportation done by the goods trains. They constitute at once a measure of expense and of revenue. The extent of the activity of wagons and their productivity are shown by the statistics of 'wagon miles per wagon day' and 'net ton miles per wagon day'.

Wagon miles per wagon (per) day provide an important index of the utilization of wagon stock from the point of view of movement. An increase in the figure normally implies a decrease of delay in wagon movement or increased speed of movement. Fluctuations in the figures presented by this unit are the reflex of numerous operating conditions, such as the volume of traffic offered, speed of trains, length or number of wagons per train, delays in transit, etc.

TABLE 106. WAGON MILES AND NET TON MILES PER WAGON DAY*

(CLASS I RAILWAYS)

Year	Wagon miles per wagon day			Net ton miles per wagon day		
	Broad	Metre	Narrow	Broad	Metre	Narrow
1924-5	37	31	17	328	153	50
1925-6	34	31	16	295	149	46
1926-7	33	31	14	293	146	39
1927-8	35	32	14	311	156	38
1928-9	37	31	15	329	153	41
1929-30	38	31	15	335	149	40
1930-1	36	28	14	314	137	37
1931-2	32	25	13	277	128	31
1932-3	31	24	12	261	120	30
1933-4	33	27	13	283	134	32
1934-5	35	28	13	308	147	32
1935-6	35	28	14	309	142	33
1936-7	37	30	14	324	150	37

**Railway Board's Reports*, Vol. II.

The wagon milage on the broad gauge tended to decrease in the post-separation period. After a temporary recovery during 1928-9, there was a sharp decline from 38 miles in 1929-30 to 31 miles in 1932-3, from which there was a gradual

return to the basic figure of 37 miles in 1936-7. On the metre gauge the average wagon milage appears to have remained stable at 31 miles till 1929-30, after which there was a drop to 24 miles in 1932-3. By 1936-7 there was a gradual improvement to 30 miles. The wagon milage on the narrow gauge indicates a decrease since 1924-5.

The productivity of a wagon, as stated earlier, is shown by the net ton miles per wagon day. The net ton milage is a reflex of all the factors affecting a goods train so far as the individual wagon is concerned, such as the speed of wagon movement, wagon load, percentage of loaded wagons, etc. The statistics given in Table 106 reveal considerable variations during the period. The net ton milage only twice exceeded the basic figure of 328, during 1928-30, and after a decrease thereafter approached this figure again only in 1936-7. The net ton milage per wagon day on the metre gauge also showed a downward trend since 1927-8. The average increased from 153 to 156, from which there was a decline to 120 in 1932-3 and a subsequent recovery to 150. The narrow gauge wagons suffered a general deterioration throughout the period and the net ton milage dropped from 50 to 37 in 1936-7.

SPEED OF TRANSPORTATION

We may now examine the time element from another aspect, namely, from the point of view of the 'ton miles per train-hour', which is considered one of the most important indices of efficient operation. The train load by itself does not take into account the speed of movement: the ton miles per train-hour gives the product of both load and speed. 'It is,' Professor William J. Cunningham states, 'analogous to the horse-power unit. It combines in itself the net effect of the operating policy between two extremes of loading the locomotive to every ton it can drag at low speed over the ruling grade and of sacrificing the tonnage in order to make the trip quickly. There is always a critical point between the two extremes which under normal conditions will produce

the maximum of ton miles per train-hour at the minimum cost per ton mile.'[3]

The statistics of gross and net ton miles per goods train-hour, presented in Table 107, disclose a remarkable improvement during the entire period under review. During 1924-30, the gross ton milage per goods train-hour on the broad gauge increased from 7,027 to 8,251, an increase of 17 per cent. The improvement during the next period was even greater and stood, as compared with 1924-5, 40 per cent higher in 1936-7. The depression and its effects have not affected the trend of this figure. The net ton miles per goods train-hour also record a substantial improvement. An increase of 13 per cent achieved during the pre-depression period was improved to 30 per cent in 1936-7.

TABLE 107. GROSS AND NET TON MILES PER GOODS TRAIN-HOUR*

(CLASS I RAILWAYS)

Year	Broad Gross	Broad Net	Metre Gross	Metre Net	Year	Broad Gross	Broad Net	Metre Gross	Metre Net
1924-5	7,027	3,541	3,215	1,616	1930-1	8,540	4,097	3,614	1,749
1925-6	7,368	3,576	3,118	1,542	1931-2	9,324	4,478	3,790	1,859
1926-7	7,725	3,792	3,176	1,571	1932-3	9,588	4,541	3,839	1,845
1927-8	7,970	3,900	3,332	1,668	1933-4	9,937	4,741	4,296	1,972
1928-9	7,948	3,837	3,292	1,635	1934-5	9,949	4,770	4,181	2,042
1929-30	8,251	4,012	3,411	1,656	1935-6	9,808	4,683	4,217	2,043
					1936-7	9,834	4,610	4,217	2,075

* *Railway Board's Reports*, Vol. II.

On the metre gauge the performance was not quite so satisfactory, but it certainly denoted a substantial improvement. Gross ton milage per train-hour recorded an improvement of 31 per cent, while net ton milage exhibited a lower pace of increase to 28 per cent by 1936-7.[4]

It is necessary to observe that, despite the remarkable improvement in both the average gross ton miles and net ton miles per goods train-hour, the proportion of the latter to the former showed a tendency to decrease.

[3] William J. Cunningham, *American Railroads: Government Control and Reconstruction Policies*, 1922, p. 38.

[4] There are no statistics available for the narrow gauge sections.

Punctuality of passenger trains

We may now turn to an important aspect of passenger train operation, namely, the punctuality of service. Generally speaking, delays and loss of time detract a great deal from the efficiency of both passenger and goods services. Transport being a perishable commodity, the time element is a vital factor. This is particularly the case with the operation of passenger trains, which Mr. Sherrington considers to be of

TABLE 108. PUNCTUALITY OF PASSENGER TRAINS*

(CLASS I RAILWAYS)

Year	All trains†	Mails‡	Mixed trains	Suburban	Others
			Broad gauge		
1924-5‖	61·0	62·2§	75·4§	94·0§	77·3§
1925-6‖	71·8	80·6§	81·5§	98·5§	82·4§
1926-7¶	77·8	80·6§	87·1§	96·9§	87·3§
1927-8¶	76·8	66·4	77·8	78·7	77·7
1928-9	77·8	69·7	80·5	76·7	78·9
1929-30	74·6	66·3	77·6	75·5	74·1
1930-1	76·0	69·2	79·6	76·7	75·0
1931-2	83·5	74·5	83·2	83·8	81·6
1932-3	85·1	81·3	82·9	85·7	84·3
1933-4	87·0	83·0	84·3	89·5	84·5
1934-5	88·1	82·9	85·7	89·4	85·3
1935-6	87·3	81·9	83·5	88·5	85·3
1936-7	84·7	81·4	81·8	83·5	81·6
			Metre gauge		
1924-5‖	64·9	67·8	71·4	95·8	84·0
1925-6‖	70·5	74·8	77·4	95·3	85·2
1926-7¶	68·2	72·2	77·1	93·8	89·1
1927-8¶	72·1	71·5	72·1	89·2	61·9
1928-9	72·4	68·9	73·8	84·8	61·5
1929-30	73·3	68·6	74·4	90·7	63·6
1930-1	75·6	68·3	77·2	83·3	70·5
1931-2	80·5	72·5	80·5	91·5	76·2
1932-3	86·5	85·0	86·6	95·9	83·8
1933-4	87·2	86·4	86·5	95·7	85·2
1934-5	88·0	87·2	87·0	95·9	85·8
1935-6	88·5	88·8	87·1	97·4	87·8
1936-7	87·3	83·6	86·0	95·3	86·6

* *Railway Board's Reports*, Vol. I.
† Including electric multiple unit trains.
‡ Includes important through trains.
§ Within 10 minutes of the right time.
‖ Average of February.
¶ Average of January.

supreme importance.[5] Punctuality in the service pleases the patrons of the railway and the loss of it creates annoyance. Success in maintaining punctuality depends largely on 'good organization, the team spirit and a high degree of *esprit de corps*.'[6]

The statistics compiled on Indian railways on the punctuality of passenger services suggest considerable improvement as compared with earlier years. The percentage of trains arriving on time rose from 61 to 88 in 1934-5 on the broad gauge, and from 65 to 89 in 1935-6 on the metre gauge. These statistics relate to all passenger trains, mail and through, mixed, suburban, electric multiple unit and other passenger train services. Examining these classes of passenger services individually, the percentage of trains arriving on time has, as shown in Table 108, gone up since 1929.[7]

Speed of goods trains

In operating goods trains, speed is an important factor. The trend of the speed of goods trains during 1924-37 has been upward. The average speed on the broad gauge increased from 8·97 miles to 11·5 miles per hour in 1936-7, an increase of 28 per cent. On the metre gauge there was also an improvement, but not to the same extent. Thus from

TABLE 109. SPEED OF GOODS TRAINS*

(CLASS I RAILWAYS)

Year	Broad	Metre	Narrow	Year	Broad	Metre	Narrow
1924-5	8·97	9·21	8·87	1930-1	10·5	10·3	8·50
1925-6	9·58	9·16	8·96	1931-2	11·0	10·5	8·89
1926-7	9·84	9·33	9·16	1932-3	11·5	10·8	8·95
1927-8	9·88	9·50	8·78	1933-4	11·7	11·0	8·92
1928-9	9·91	9·52	8·79	1934-5	11·6	11·0	8·73
1929-30	10·30	9·86	8·66	1935-6	11·5	11·2	8·80
				1936-7	11·5	11·1	9·02

* *Railway Board's Reports*, Vol. II.

[5] C. E. R. Sherrington, *Economics of Rail Transport in Great Britain*, Vol. II, 1937, p. 162.

[6] Ibid.

[7] There was a change in the basis of statistical compilation in 1927-8, and in the presentation of information prior to 1929-30. The figures are therefore not strictly comparable. But for purposes of a general comparison, the figures for the earlier years supply an approximate basis to assess the extent of improvement.

9·24 miles the average speed moved up to 11·1 miles, or by 20 per cent in 1936-7. The position on the narrow gauge has not been so satisfactory, and denotes little improvement. The averages for the different years are stated in Table 109.

FUEL CONSUMPTION

Another test of efficient operation is found in the amount of coal consumed by locomotives. The combustion of fuel creates the energy for locomotives and affords a measure of efficient and economical performance. The consumption of coal and other fuel (converted in terms of coal) is stated in terms of lbs. per 1,000 gross ton miles done by a locomotive. The amount of coal and other fuel utilized depends upon a number of factors, such as design of the locomotive, nature of the track, calorific value of the coal used, and type of transportation done. The cost of fuel on Indian railways represents, as was stated in a previous chapter, the largest item of expense on operation. The problem of fuel economy received special attention on Indian railways during the post-war decade. The attempt to reduce coal consumption meant not only a better utilization of fuel and special instructions to the engine

TABLE 110. FUEL CONSUMPTION*

(CLASS I RAILWAYS)

Pounds of fuel per 1000 gross ton miles

	Goods			Passenger		
Year	Broad	Metre	Narrow	Broad	Metre	Narrow
1924-5	144	156	389	190	185	372
1925-6	143	159	425	190	195	407
1926-7	139	154	379	186	190	393
1927-8	136	152	385	181	192	372
1928-9	134	155	386	174	193	375
1929-30	135	155	432	172	200	399
1930-1	132	155	443	172	197	404
1931-2	125	149	413	164	192	402
1932-3	124	149	416	164	186	387
1933-4	126	143	404	166	181	400
1934-5	129	142	391	169	179	403
1935-6	131	140	411	169	180	403
1936-7	131	137	395	169	181	402

* *Railway Board's Report*, Vol. II

staff to secure a higher standard of efficiency in the performance of their duties; it also involved a prevention of loss during transit and when stored at sheds. The results of the campaign for fuel economy, which was started in the post-separation period, may be judged from the statistics of locomotive fuel consumption on goods and passenger services presented in Table 110.

On the broad gauge coal consumption of goods engines decreased from 144 to 124 lbs. per gross ton mile in 1932-3, from which there was a tendency towards an increase. Passenger engines effected an even larger economy of fuel from 190 to 164 lbs. in 1932-3. A slight increase, noticeable here also since that year, was attributed to the use of inferior coal.

The record for metre gauge locomotives was less striking. There was almost the same rate of fuel consumption on goods engines till 1930-1, after which there was a decrease to 137 lbs. in 1936-7, a reduction of 12 per cent as compared with 1924-5. On the passenger service there was an increase which was maintained till 1929-30 and a gradual decrease was effected during succeeding years. On the narrow gauge there was an increase.

It is clear that the reduction in coal consumption represents a remarkable achievement. Taking the standards of consumption in 1924-5, the reduction of 13 lbs. for goods and 21 lbs. for passenger locomotives running on the broad gauge sections implies that the railways saved about 224,000 tons and 241,000 tons, respectively, in 1935-6, or 465,000 tons in the aggregate.

RATIO OF PRODUCTIVE TO INDIRECTLY PRODUCTIVE OPERATION

The factors of railway working dealt with in the preceding paragraphs relate to what may be called the productive phases of operation, namely, those activities which enter into the production of train-miles to carry goods and passengers. But before a train can be operated, there is a certain amount of preparatory work involved in the marshalling and sorting of wagons and carriages, shunting into position and linking with

one another. The operation of a locomotive in connexion with this type of work is unremunerative, or only indirectly productive. A certain amount of engine milage attributable to those movements, otherwise termed 'shunting engine milage,' is necessary and cannot be avoided; but the volume of such movements is so great as to afford large scope for economy.

Shunting milage

Shunting milage is usually expressed as a ratio of the train milage to indicate the proportion of unremunerative locomotive milage worked. In 1924-5 for every 100 passenger train miles on the broad and metre gauges, there were respectively 6·65 and 5·92 shunting miles. The figures given in Table 111 show a record of progressive increase in efficiency. Despite a set-back during 1928-34, the shunting miles dropped to 5·15 and 4·54 miles, respectively, on the broad and metre gauges. The shunting milage in 1936-7 as compared with 1924-5 stood 23 per cent lower.

TABLE 111. SHUNTING MILES PER ONE HUNDRED TRAIN MILES*

(CLASS I RAILWAYS)

	Passenger and proportion.		Goods and proportion	
Year	Broad	Metre	Broad	Metre
1924-5	6·65	5·92	42·5	32·9
1925-6	6·46	5·85	40·5	32·3
1926-7	5·62	5·64	38·7	31·8
1927-8	5·25	4·49	38·0	32·4
1928-9	5·29	5·48	36·9	32·8
1929-30	5·27	5·25	37·9	32·7
1930-1	5·31	5·10	37·5	33·2
1931-2	5·54	5·04	36·0	31·7
1932-3	5·51	5·35	37·0	31·6
1933-4	5·37	5·43	35·8	31·9
1934-5	5·03	5·07	35·4	32·6
1935-6	4·94	4·57	35·1	32·3
1936-7	5·15	4·54	34·2	32·4

**Railway Board's Reports*, Vol. II.

The shunting milage operated in connexion with the goods service showed a similar decrease on the broad gauge. There were operated on the broad gauge during 1924-5, 42·5 shunting miles for every 100 goods train miles. During succeeding

years there was a steady decrease to 34·2 miles in 1936-7. On the metre gauge, the shunting milage has shown little improvement. From 32·9 miles in 1924-5 there was a slight decrease in certain years, but in 1936-7 the shunting milage stood at 32·4.

The shunting milage operated in connexion with goods traffic is also to be examined with reference to the wagon milage. The statistics given in Table 112 indicate the wagon milage per shunting hour and the progress accomplished in increasing the ratio of productive work. The performance on the broad gauge shows a steady improvement in the wagon milage per shunting hour from 498 to 660, or 33 per cent, by 1936-7. On the metre gauge the record is not so good, and the wagon milage per shunting hour rose from 484 to 536, or by 11 per cent only.

TABLE 112. WAGON MILES PER SHUNTING HOUR*

(CLASS I RAILWAYS)

Year	Broad	Metre	Year	Broad	Metre
1924-5	498	484	1930-1	595	499
1925-6	537	512	1931-2	616	523
1926-7	543	516	1932-3	609	519
1927-8	580	517	1933-4	637	531
1928-9	595	504	1934-5	641	533
1929-30	585	496	1935-6	641	533
			1936-7	660	536

**Railway Board's Reports*, Vol. II.

COMPOSITE INDEX OF OPERATING EFFICIENCY

The different aspects of working considered in the preceding pages provide indices of efficiency on the particular phases of operation to which they relate. It will afford us a clearer picture of the progress in operating efficiency of Indian railways if we combine them to form a composite index. The factors taken to form the composite index are :

(1) Wagon miles per wagon day (Goods)
(2) Net ton miles per wagon day ,,
(3) Gross tons per goods train ,,
(4) Net tons per goods train ,,
(5) Gross ton miles per goods train-hour
(6) Net ton miles per goods train-hour

(7)	Engine miles per engine day	(Goods)
(8)	Engine miles per engine day	(Passenger)
(9)	Punctuality of passenger trains	,,
(10)	Percentage serviceable engines	(Goods and passenger)
(11)	Percentage serviceable wagons	(Goods)
(12)	Percentage serviceable passenger carriages	(Passenger)
(13)	Fuel consumption, lbs. per 1,000 gross ton miles	(Goods and proportion)
(14)	Fuel consumption, lbs. per 1,000 gross ton miles	(Passenger and proportion)
(15)	Shunting miles per 100 train miles	(Goods and proportion)
(16)	Shunting miles per 100 train miles	(Passenger and proportion)

Of the sixteen factors included, ten relate to goods traffic operation, five to passenger, and one is common to both. They may be taken to indicate the principal aspects of working, and the relative importance of the two classes of traffic. Taking the year 1924-5 as the base year, the improvement in operating efficiency on the broad and metre gauges of Class I railways since 1930 is as follows :

TABLE 113. COMPOSITE INDEX OF OPERATING EFFICIENCY

(CLASS I RAILWAYS)

(1924-5 = 100)

	Broad	Metre
1929-30	109·56	103·25
1930-1	108·88	103·13
1931-2	110·75	104·75
1932-3	110·38	104·63
1933-4	112·75	108·44
1934-5	114·25	110·19
1935-6	114·25	110·69
1936-7	114·69	112·00

The composite index of operating efficiency indicates an increase of 9·56 per cent in 1929-30 on the broad gauge. From the next year onwards, despite the commencement and growing severity of the depression, there has been a steady progress in the efficiency of working. In 1933-4, considered the worst year, the index rose by 12·75. During succeeding years there was a further increase, as shown by the index, which stood 14·69 per cent higher.

The operating factors on the metre gauge lines reflected a lower rate of improvement. In 1929-30 the increase in

efficiency was only 3·25 per cent as compared with 9·56 per cent on the broad gauge. But from 1931-2 onwards, during the period of the depression, there was a remarkable improvement, and the composite index stood 12 per cent higher by 1936-7. Railway administrations were thus able to force up the standards of working on the metre gauge to near about the same levels as on the broad gauge, which is particularly satisfactory in view of the disparity in 1929-30.

There can be no doubt, therefore, that Indian railways improved their operating efficiency considerably as compared with the standards of working in 1924-5. The performance on individual railways is bound to vary, but even here detailed analysis of the composite indices discloses a general improvement. Among state-managed systems of the Class I railways, a substantial rise in efficiency, varying from 12 to 24 per cent, was effected on all the lines with the exception of the N.W., on which there was a comparative deterioration and an improvement in 1936-7 of 1·4 per cent only.

The company-managed railways also disclose a similar improvement in operation, and on the whole they compare favourably with the state-managed lines. In this group there are considerable differences between one railway and another. Thus the Bengal Nagpur and South Indian (B.G.) show increases in efficiency to the extent of 20-2 per cent, while others record lower figures.

It is interesting to compare the performance of the state-managed and company-managed railways. The indices for select years for the broad gauge sections of four State and four company lines disclose significant changes in the operating efficiency of the two groups. As may be seen from the averages shown in Table 114, the operating efficiency of the four State systems increased from 10·34 per cent to 12·70 per cent in 1936-7. The company-managed lines, starting from a much lower figure of 4·92 per cent, showed during 1930-7 an increase in efficiency to the extent of 18·02 per cent. This is a striking increase, and is due mainly to the improvement under the milage per goods train-hour.

TABLE 114. PROGRESS OF OPERATING EFFICIENCY ON THE STATE-MANAGED AND COMPANY-MANAGED RAILWAYS DURING 1930-7*

Broad gauge											
State-managed						*Company-managed*					
Railways	1929-30	1932-3	1934-5	1935-6	1936-7	Railways	1929-30	1932-3	1934-5	1935-6	1936-7
E.B.	16·27	10·27	16·73	12·27	13·33	B.N.	12·27	16·93	16·93	20·33	19·80
E.I.	11·13	12·53	13·47	12·00	11·87	B.B.&C.I.	1·87	3·20	11·13	12·80	16·27
G.I.P.	14·27	18·20	22·00	23·67	24·20	M.&S.M.	3·80	4·93	10·80	14·33	13·60
N.W.	−0·73	−3·40	−0·80	−1·13	1·40	S.I.	1·73	7·40	8·80	16·87	22·40
Average	10·34	9·40	12·85	11·70	12·70	Average	4·92	5·62	11·92	16·08	18·02
Metre gauge											
Burma	6·27	8·40	15·80	14·13	16·00	A.B.	3·13	−0·43	9·93	5·13	7·13
						B.B.&C.I.	−1·87	1·00	6·93	6·93	8·47
E.B.	12·27	12·47	14·13	17·47	17·53	M.&S.M.	11·07	7·93	11·93	10·87	11·47
						S.I.	0·33	3·80	10·53	12·87	12·27
						B.&N.W.†	−6·80	2·87	7·33	9·40	12·53
						R.&K.†	12·20	9·53	8·60	8·00	10·97
Average	9·27	10·44	14·97	15·80	16·77	Average	3·17	3·08	9·83	8·95	9·84

* The figures are percentage increases in composite indices of operating efficiency, computed as stated earlier in the text taking 1924-5 = 100. †Excluded from average.

The examination of the group efficiency of the metre gauge sections does not afford so good a basis of comparison, as we have only two State lines against four company lines. The group index moved during 1930-7 from an increase of 9·27 per cent to 16·77 per cent, on the former and of 3·17 per cent to 9·84 per cent on the latter. While the general level as compared with 1924-5 was substantially higher on the State lines, the rate of increase on company lines exceeded that of the former. But there is still a difference of 6 to 7 per cent in favour of the State railways.

It is necessary to exercise some caution in interpreting these indices. Such high figures as 20 per cent and over in the composite index, and even higher figures under the individual factors, indicate in all probability an unsatisfactory situation in the base year. But even allowing for this, it is clear that the movement has been towards greater efficiency in operation.

STORES BALANCES

The progress in administrative and operating efficiency resulting in a reduction of expenditure is illustrated by the stores balances. Indian railways require a considerable volume of diverse classes of materials which have to be kept in stock

to avoid delay in replacement or repairs of worn-out equipment. The need to carry adequate stores may not arise in such an acute form in countries where the manufacturing industries exist to supply the domestic railway market. In India most of the materials have to be imported, and railways have to provide themselves with large stocks well in advance of their actual needs. The maintenance of stores is, therefore, an important item for Indian railways.

The maintenance of stocks of stores raises several important questions of financial policy. Stores lying idle or unutilized are materials not earning a return on the cost incurred in their purchase. The magnitude of the stocks of stores may be judged from the fact that in 1924-5 railways had with them stores of the value of Rs. 20 crores. This implies that the investment in materials remaining idle costs railways, taking a 5 per cent interest, Rs. 1·25 crores. Sound and economical management always endeavours to keep down the stock of materials to the minimum. Apart from the direct loss in tying up capital, there is the danger of materials becoming useless through obsolescence on account of technical improvements in railway practice. The policy followed since 1920 shows that Indian railways have been alive to these problems. The value of stores balances at the end of each financial year during 1920-37 is shown in Table 115.

TABLE 115. STORES BALANCES ON STATE-OWNED RAILWAYS*

(*Rs. in crores*)

Year	Rs.	Per cent of 1924-5	Year	Rs.	Per cent of 1924-5
1921-2	23·67	139	1929-30	16·95	99
1922-3	23·51	138	1930-1	15·21	89
1923-4	22·09	129	1931-2	13·65	80
1924-5	17·09	100	1932-3	12·10	71
1925-6	15·68	92	1933-4	10·22	60
1926-7	14·69	86	1934-5	9·34	55
1927-8	17·32	101	1935-6	9·40	55
1928-9	17·09	100	1936-7	9·20	54

* *Railway Board's Reports*, Vol. I.

Bulk orders in connexion with post-war rehabilitation programs and increased prices led to a large amount of

capital being locked up, and the stores carried in stock in 1921-2 were valued at Rs. 24 crores. The criticism of the Inchcape Committee led to measures being taken to write down surplus stocks and secure greater coordination between the orders placed and the requirements of railways. The stores departments of railways were reorganized and this helped to bring about an improvement in the situation. The effect of these changes is seen in the reduction of stores balances to Rs. 17·09 crores in 1924-5. But as the succeeding period was one of active construction and expansion, stores balances must have been higher than might normally have been required. After 1930 the trend was definitely downward. During 1934-7, the value of stores balances, as shown in Table 115, was only 55 per cent of 1924-5. On many railways the reductions were even greater than this.

Before any inference is drawn from these figures, it is as well to state that the volume of stocks depends more or less on the character of the works programs of the individual railways. Again, a reduction in the cost of stores may not imply that the quantity of stores has proportionately decreased, for the prices of materials, as was the case during the later years, might have come down. The decrease was also to some extent attributable to the policy of buying locally imported materials and thus transferring the burden of carrying the stores to the importing firms. Since 1932 the Railway Board decided on a policy of keeping the closing balances at 40 per cent of the issues during the year. But this objective was reached only in 1935-6, as the sudden curtailment of construction programs subsequent to 1930 left a large accumulation of materials and consequently larger balances. That there was a progressively increasing control over stocks of stores and a more intelligent estimation of requirements is borne out by the statistics quoted earlier.

CLAIMS FOR COMPENSATION FOR LOSS AND DAMAGE

Before concluding this chapter, reference may be made to one more aspect of railway administration, namely, the reduction of

loss and damage to goods in transit and of compensation paid on that account. A serious situation had developed during the post-war years. In 1913-4—before the war—the cost of compensation amounted to Rs. 25·79 lakhs. In 1922-3 the claims paid amounted to more than Rs. 120 lakhs, an increase of 360 per cent. The principal causes for this unsatisfactory situation were stated to be increased traffic; increases in the prices of commodities; disturbed economic conditions in the country since the war resulting in higher cost of living, combined with unemployment and increased lawlessness; shortage of rolling-stock resulting in delay in dispatch and movement of goods, and consequently increased opportunities for depredation; defective condition of rolling-stock resulting in loss in transhipment and increased damage to consignments requiring protection from weather; and dislocation of traffic consequent on strikes and inadequate general supervision owing to temporary shortage of officers. The Inchcape Committee found that these might have been contributory causes, which, however, were not enough to account for so great an increase. They, therefore, recommended a careful investigation as to the measures needed and a general tightening up of control. With these measures and falling prices, the committee argued that a considerable saving could be effected.[8]

The increase in the number of claims made and discharged reflects the effects of the laxity which had grown up in the methods of working. Not only did the payments made represent a large amount of expenditure; but the claims put forward and repudiated must have involved a considerable loss to the business community. A determined attempt to prevent loss and damage was made in 1923-4 and in succeeding years. Improved methods of securing wagon were introduced and watch and ward departments reorganized. The rehabilitation program replaced old by new rolling-stock, and brought better illumination at stations and adequate fencing of railway property. More efficient supervision of outdoor staff was enforced and office

[8] *Inchcape Committee Report*, para. 20, p. 105.

procedure was reorganized to enable more expeditious scrutiny and settlement of claims. Finally, responsibility was fixed on the staff with a view to preventing the recurrence of such losses.

The claims paid by Class I railways (excluding the Jodhpur) from 1922-3 to 1935-6 are given in Table 116. It will be seen that a reduction was effected from Rs. 56·70 lakhs in 1924-5 to Rs. 3·53 lakhs, or 6 per cent, by 1935-6. Even taken as a percentage of goods earnings, the improvement has been remarkable: the decrease amounted from 0·47 per cent to 0·06 per cent.

TABLE 116. COMPENSATION FOR GOODS LOST OR DAMAGED*

(CLASS I RAILWAYS)

Year	Rs. in lakhs	Percentage of goods earnings	Year	Rs. in lakhs	Percentage of goods earnings
1922-3	1,20·31	..	1929-30	9·24	0 14
1923-4	78·97	..	1930-1	7·66	0·12
1924-5	56·70	..	1931-2	5·03	0·09
1925-6	29·32	0·47	1932-3	3·66	0·07
1926-7	15·22	0·24	1933-4	2·87	0·05
1927-8	9·50	0·14	1934-5	2·92	0·05
1928-9	10·93	0·16	1935-6	3·53	0·06

* *Railway Board's Reports*, Vol. II. The figures exclude the Jodhpur.

The analysis of railway operation in all its different aspects, undertaken in this chapter, serves to indicate that Indian railways improved their general efficiency of operation to a remarkable extent. This conclusion is supported by all the factors examined: the general condition of the stock, the more intensive utilization of railway plant and equipment, the decrease in coal consumption, the decrease in unremunerative phases of working, the reduction in stocks of stores, and loss and damage to goods in transit.[9] The improvement was not arrested during the depression. In fact, as a result of the job analysis investigations, inaugurated after the Pope Committee's enquiries,[10] the campaign for further economy and increased efficiency was prosecuted. The improvement of recent years is largely due to these efforts.

[9] The Wedgwood Committee stated that 'the operating statistics indicate that there has been a substantial advance in efficiency and economy in management since the depression began in 1930.'—*Wedgwood Committee Report*, pp. 13-4.

[10] Report of the committee, appointed to suggest methods by which efficiency can be improved and economy effected, etc., February 1933; the second report, February 1934.

CHAPTER XI

THE STATE AND RAILWAY ADMINISTRATION

THE State has been intimately associated with Indian railways from the very beginning of railway construction. Apart from the generous terms on which private enterprise was encouraged —supply of land free of cost, financial assistance and guarantee against loss—the Government of India were by force of circumstances committed to a policy of gradual acquisition of the proprietorship, if not the management, of most of the lines. As the State had provided the bulk of railway capital, the attempt to safeguard its interest resulted, even during the era of companies, in a most elaborate and thoroughgoing system of control of railway operation. Thus the companies were required not only to maintain, equip and staff the line to the satisfaction of Government, they were also to carry out alterations or improvements in the line or in working as might, in the interest of safety, be considered necessary. Under their contracts the companies were obliged to enter into agreements with other railways in connexion with service, facilities, rates and fares, interchange of equipment, etc. The train service should be such as Government required and the maxima and minima rates and fares were prescribed by them. In all other matters, the companies were subject to Government supervision and control. They had not even the right to keep or spend any money received by them in the course of business. All moneys received in respect of the undertaking, whether on capital or revenue account had, under the contracts, to be paid to Government account. All expenditure

by the companies had to be stated and submitted for sanction of Government. These features were disclosed by all the guaranteed companies till their acquisition by the State. In view of such rigorous surveillance by the State, it is doubtful if the guaranteed companies, shorn of all initiative and independence in management, retained anything more than the semblance of private undertakings. The executive Government had full control of railway policy, finance and operation.

The increasing public interest in railway problems and in their relation to the State coincided with the constitutional changes under the Government of India Act, 1919. Railway policy, finance and administration came within the detailed review of the Central Legislature and other bodies set up by it. Our study of Indian railway finance will not be complete without a brief survey of the present machinery for the control of railway policy and working. It consists of the following bodies :

(1) Central Legislature
(2) Committees of the Central Legislature :
  (a) Central Advisory Council
  (b) Standing Finance Committee, Railways
  (c) Public Accounts Committee
(3) Railway Board
(4) Rates Advisory Committee
(5) Local advisory councils.

CENTRAL LEGISLATURE

Under the present constitution, the administration of the State-owned railways comes within the vote of the Legislative Assembly. The presentation of the railway budget has always been an occasion for a full dress debate. The deliberations and discussions during the voting of the demands for grants have afforded opportunity for a comprehensive review of policy within the limits of the time allotted. Apart from this, through the exercise of the rights of interpellations and moving resolutions, the Central Legislature has exerted considerable influence over the policy and action of the railway administrations. No critic of the legislature can accuse it

of abusing the powers it enjoys over railway matters. The legislature has throughout, with few exceptions, stood by the railways in supporting their policies and programs, such as the separation of railway finance, the post-war capital program, and other administrative and financial reforms. It has gone further and sought to correct the inevitable defects of a technically irresponsible executive department. It is amazing to recall at this date that conditions of travelling for third class passengers should have reached such serious dimensions two decades ago as to become almost a national scandal. Railway debates during the twenties vividly described and criticised them. That the program of improving the conditions of passenger travel in the lower classes was energetically and expeditiously pursued owed a great deal to the special interest shown by the legislature on this question. Again the policy followed by the Railway Board to correct racialism in the superior services—a defect to which the Acworth Committee drew particular attention—has been another fruitful field for criticism by the legislature and noticeable progress has been recorded. Apart from the non-votable items such as interest and sinking fund charges, the bulk of railway expenditure comes under the vote of the Assembly. A separate day is allotted for general debate and four days for discussions on the demands for grants. The Assembly has rarely been able to deal with more than two demands, but that containing the expenditure of the Railway Board has provided extensive scope for a comprehensive discussion of the various subjects in which the Assembly is interested.

COMMITTEES OF THE CENTRAL LEGISLATURE

A more detailed scrutiny is exercised by the three committees of the legislature, the Central Advisory Council, the Standing Finance Committee and the Public Accounts Committee. The Central Advisory Council, constituted somewhat differently from the composition recommended by the Acworth Committee, started with nominated members to tender advice on questions of policy and, with the separation of railway

finance, became an elected body. The membership of the council is made up of the members of the Standing Finance Committee for Railways, one nominated official member, and six non-official members each from the Council of State and the Assembly, selected from a panel of eight. The valuable work done by the Advisory Council will be clear from the fact that many changes of a far-reaching character introduced since 1924 took their final form from their deliberations. Consider, for example, the separation of railway finance, the constitution of the rates tribunal, the institution of the depreciation fund, the technical training of officers, control of stores balances, and the financing of branch lines, all of which have been fully or partly accepted by the Railway Board. The initiative and driving force for carrying out these reforms, it can hardly be denied, have come mainly from the legislature working through the council.

The convention set up a new advisory body, the Standing Finance Committee. The Railway Department is required to place all estimates of expenditure for the approval of this committee before bringing them to the Assembly. The proceedings of the committee indicate that on the whole the Railway Department has had to encounter little difficulty or friction from the members. It has secured the support of the committee to almost all its proposals, even to many of the schemes which, in the light of subsequent experience, appear today of doubtful value.

Finally, the Public Accounts Committee undertake the usual functions of ascertaining the financial propriety and efficiency of financial control through post-mortem examination of railway accounts. It was this committee which brought to light cases of financial irregularities through the reports submitted by the Railway Audit Department. The value of the scrutiny exercised by the legislature and the committees hardly needs further amplification. The fact that financial irregularities continue to be discovered shows how persistent has to be its vigilance. The responsibility for accountability and the dread of exposure have been the two con-

stitutional devices to provide deterrents for those who are tempted to exceed the borderline of financial rectitude.

The influence of politicians in these respects has been on the whole to the general good. If all the improvements were not initiated by the legislature, there was undoubtedly considerable pressure from its influence and constant criticism to carry out many of them. What had previously been mere departmental routine and changes ordered by the heads of departments had to be justified and explained to the Assembly on economic or technical grounds. Further, before voting took place the Railway Member or the representatives of his department had to meet the criticisms raised during the debate and explain incidentally the whys and wherefores of the railway estimates. The very fact of having to account for their actions naturally had the result of making the railway authorities more circumspect about their policy and procedure.

It is interesting to inquire into the reasons why the baser forms of political pressure have not been at work so far. One fact seems to be obvious: the legislature with its restricted powers and new to its duties has been too much engrossed in its efforts to exact comformity to its wishes from a technically irresponsible and irremovable executive on fundamental problems to permit sectional questions to intrude into its discussions. Thus the Assembly could not afford to waste time on smaller matters when, as in 1920 and 1921, the question of state management had to be decided. Naturally attention had to be concentrated on achieving the more important end. Again, as regards Indianization it was more a question of policy than one of groups or individuals. It was when the Assembly had won on the major points that such questions as communal distribution of railway appointments, preferential treatment of minorities and such like matters began to intrude into the Assembly debates.

RAILWAY BOARD

The executive organization in charge of railway administration is the Railway Board, and, as at present

constituted, is the Railway Department of the Government of India, exercising powers of general control over all railway matters in India. The membership of the Board consists of a Chief Commissioner, a Financial Commissioner, a Labour Member, and two Members for Traffic and Engineering. Since 1931 as a result of retrenchment measures two posts have been held in abeyance. The Railway Board profess to follow a policy of dealing with only important matters, of delegating large powers to Agents or General Managers, and of interfering as little as possible with the details of administration. Individual railways are free to fix what rates and fares they please so long as they are within the maxima and minima fixed by the Board. But the details of the classification of goods and rates and fares are left to the Indian Railway Conference Association which represents practically all the railways. Though its rules and regulations are binding only to the extent to which they are agreed to by individual railways, its work on tariffs and carriage and wagon interchange has contributed to the introduction of uniformity in practice.

RATES ADVISORY COMMITTEE

The Railway Rates Advisory Committee, constituted on 1 April 1926, sought to remedy a serious defect in Indian railway organization, namely, to provide a machinery to deal with complaints from the customers of railways. The Railway Commission provided for in the Act proved too cumbersome to be appointed and too expensive for the trader. Though the Act was passed in 1890, the commission has in fact never been appointed, even though the commercial community had pressed for it.[1] The Acworth Committee recommended the establishment of a rates tribunal on the lines of the British Railway Rates Tribunal. The advisory status to begin with was justified not only on the model of the British experiment,

[1] 'The enforcement of the remedy under this Act involves the setting up of a special court to try each individual case, and this procedure is so cumbrous and inapt that in fact no court has ever sat.'—*Acworth Committee Report*, para 146, p. 49.

but also to afford the committee an opportunity to pioneer the new path and to gain experience before being invested with the powers and authority of a tribunal. But the example of the transformation of the British committee into a tribunal within two years has not been followed and the advisory status of the Indian committee still continues. The constitution, status, and limitations of jurisdiction and powers have hampered the committee from becoming an active agent in correcting defects and deficiencies in current railway rates practice. The scope of the terms of reference is restricted to unreasonable rates and undue preference.[2] The committee cannot pronounce an opinion on so important a matter as the classification of goods. Even questions falling within the scope of the terms of reference, can be taken up only on a direction to the committee by the Railway Board.[3] Even on matters under reference the committee's utility to afford relief to the complainants, if deemed equitable and necessary, is strictly circumscribed. The advisory character of the committee militates against making an effective appeal to the trading public, as the advice tendered to the Railway Board may not be accepted. In fact, there have been cases where the Railway Board questioned the findings of the committee on points of fact. Even more unusual for a semi-judicial body, following legal forms and procedure, is to find the Government of India assuming

[2] The terms of reference also include complaints or disputes in respect of terminals, reasonableness as to conditions as to packing of articles liable to damage in transit or cause damage to other merchandise, conditions as to packing attached to a rate, and complaints as to the provision of reasonable facilities.

[3] The procedure for the reference of complaints to the Rates Advisory Committee is as follows : (*a*) An application for a reference shall be addressed to the Government of India (Railway Department), a copy being sent to the railway concerned accompanied by a deposit of Rs. 10. (*b*) Within one month of the receipt of the application, the General Manager shall prepare a statement of the case with his observations thereon and submit it to the Secretary, Railway Board. (*c*) After consideration of the application and the General Manager's observations, the Government will determine whether or not it should be referred to the Rates Committee for consideration. (*d*) If the application is not to be referred to the committee, the applicant will be informed accordingly. (*e*) If Government decide to refer it, the respective parties will be so informed and the committee will be instructed to deal with it. (*f*) If the General Manager is able to dispose of the complaint to the satisfaction of the complainant within one month and the applicant withdraws his complaint, the deposit will be returned. Note that the procedure mentioned in (c) clearly takes out the powers of the committee from dealing with the complaints directly.

competence on a point of law as well.[4] The real value of the committee to the customers of railways has thus been unduly narrowed by so many limitations. This is probably one of the reasons why so few cases have been dealt with by the committee. The potentialities of this body for public good can only be realized by an enlargement of its scope, powers, discretion and authority.[5]

The local advisory councils are smaller bodies in local centres attached to individual railway administrations to provide a convenient meeting ground for railway executives, the business community and the general public.

To this necessarily brief survey of the existing scheme of things must be added a few observations in the light of certain special features in India. The intimate relations of the State with railway management and operation arising from its proprietorship of most of the lines, have made both the interest and knowledge pertaining to railway economics far less diffused than in other countries. In Great Britain, for example, with the dominance of private enterprise, the public generally, and the stockholders and speculative elements in the City in particular, take so keen an interest that weekly statistics are scrutinized with an eagerness that is quite unknown in India. Added to this is the fact that until recently, the wisdom and experience garnered by officers of the higher grades of railway service were not retained in the country owing to their retirement from India. The effect of these factors combined with a

[4] The orders of the Government of India in Case II *Central Provinces Portland Cement Company, Ltd.*, v. *The G.I.P. Railway*, and in Case XVII, *The Alembic Chemical Works Ltd.*, v. *The E.I., G.I.P., N.W., B.B. &C.I., B.N. and M.&S.M. Railways in regard to Medicines.*

[5] The observations of the Wedgwood Committee on the Rates Advisory Committee are interesting : 'The existence of the Railway Rates Advisory Committee does not appear to be generally known. Those members of the trading public who know of it complain that its procedure is slow and that it is too much under the wing of the Railway Board ...we think the procedure of the committee should be made both more expeditious and more public. We accordingly make the following recommendations :

(a) Less time should be occupied in preliminaries, and the procedure generally should be expedited.

(b) At present it rests with the Government to determine whether or not an application should be referred to the Advisory Committee for consideration. In our view the Government should accept an obligation to refer to the Advisory Committee any relevant application unless in the opinion of the Government the application is frivolous or vexatious. If the Government should refuse to refer an application to the committee, they should give their reasons, in writing for so doing.'—*Wedgwood Committee Report*; para 133, p. 86.

politically irresponsible executive not amenable to popular control was to remove railways from the scope of general interest and discussion until about the last reforms. With the constitutional changes have come an enlargement of the scope for the expression of opinion, official and non-official, and supply of information on railway matters. The railway budget discussions, debates on special motions and answers to questions, proceedings of the Assembly committees—all these are reported in detail in the press—have helped to inform the public on every aspect of railway administration and thus to stimulate general interest on railway problems.

STATE MANAGEMENT SINCE 1924

We may now attempt, in the light of the present survey of railway finance and operation during 1924-37, an assessment of the effects of the policy of state management. The acquisition of the East Indian and Great Indian Peninsula Railways during 1924 and 1925 led to four major systems being directly administered by the State, and the termination of the contract with the Burma Railways in 1929 increased the total to five. The policy of further acquisition suffered a check in the thirties owing to the general financial stringency during the depression, and official pronouncements during recent years appeared to be sceptical of further progress in state management. But force of circumstances since the commencement of World War II has led to the taking over of the remaining six railways, the Assam Bengal, Bombay Baroda and Central India, Bengal and North Western (including the Rohilkund and Kumaon), Bengal Nagpur, Madras and Southern Mahratta and South Indian Railways. State management has, therefore, become an accomplished fact.

The State-owned railways constitute so colossal an undertaking that their satisfactory management presents a problem of the first magnitude. The task of the controlling authority has, with the transfer of more company-managed railways to state management, become greater than ever before. It is, therefore, important to inquire whether the system of State

administration since 1924 in effect is on the whole adequate to meet the responsibilities of efficient and economical operation of all the railways. What lessons are to be learnt from the experience of 1924-37? As the same practice has continued to be in force since 1937, a critical evaluation of the present policy and organization may be useful in ascertaining the principles to be adopted for the future management of the State-owned railways, particularly with reference to the machinery contemplated in the Government of India Act, 1935.

The demand for state management, as stated in the opening chapter, was pressed partly on political and partly on economic grounds, namely:

(*a*) the desire, due to national consciousness, for national control of railways;

(*b*) the demand for Indianization of the higher ranks of the services

(*c*) the desire to adapt the railway rates policy and purchases of stores to the needs of Indian industries; and

(*d*) to secure better conformity from railways to public opinion than; was thought possible from railways controlled by London boards of directors.

It will be instructive to examine the extent of success under state management in attaining these objectives. If they have been in the main realized, the public operation of railways is, at least from this point of view, fully justified.

(*a*) *National control*

The demand for national control of the State-owned railways was sought to be met in the present system of control and management, which is undoubtedly an improvement on its predecessor. The presentation of the railway budget estimates, the voting of the demands for grants, the prior examination of proposals by the Central Advisory Council and the Standing Finance Committee, and the scrutiny of the appropriation accounts by the Public Accounts Committee make for a comprehensive system of parliamentary control of railways. It is not, of course, as complete as the nationalist would like; the power of certification, the domi-

nance of the official bloc and the exclusion of certain items—the 'non-votable'—from the purview of the legislature set important limitations to its powers. But these features are not peculiar to railways: they form part of the present constitutional machinery. But even with these limitations, the Central Legislature, through pressure brought to bear on the executive, has been able to influence policy and secure a far closer approximation to public opinion than was conceivable in the former regime.

(b) *Demand for Indianization*

We have already seen how extraordinarily sensitive public opinion was on the subject of the low proportion of superior appointments held by Indians. The Acworth Committee pointed out: 'None of the highest posts are occupied by Indians; very few even of the higher. The position of a district engineer, district traffic superintendent or of an assistant auditor is, with one or two exceptions, the highest to which Indians have hitherto attained.'[6] The state-managed railways showed a proportion for Indians of 14·60 per cent. Some companies almost came up to this level: the percentage on the E.I. (company) was 14·61; on the B.N., 12·12, and on the the A.B., 10·17. But on others, the figure was less: the G.I.P. had less than 5 per cent and the Burma 3 per cent. The committee sympathizing with the demand for a more rapid pace of Indianization, suggested the propriety of establishing a minimum percentage to be reached within a fixed period and of increasing the facilities for training Indians for superior posts.

The steps taken to increase the proportion of Indians in the superior railway services showed some results as early as 1925 itself. Out of a total of 1,948 officers, the number of Indians stood at 463, or 24 per cent. By 1937 the percentage had advanced to 45. The percentage of European officers decreased

[6] *Acworth Committee Report*, para 182, p. 58. *Cf.* 'Out of 1,749 posts classed as superior, 182 or rather more than 10 per cent are filled by Indians. Of the 182 Indians, 158 occupy posts as assistant district officers in the various departments; 24 have reached the higher grade of district officers.'

during the period from 76 to 55. The same trend is seen in the upper subordinate services. The European element was almost halved from 31 to 16 per cent, and the Indian employees increased from 69 to 84 per cent.

If state management was expected to lead to Indianization more rapidly than was believed to be possible on the company-managed railways controlled by London boards, the position revealed by the two groups during the period, as shown in Table 117, does not indicate any striking difference. The percentage of Indian officers to the total increased during 1925-37 from 28 to 47 on the state-managed railways and from 19 to 42 on the company-managed railways. The percentage of the former stands higher, but the extent of increase has been greater on the latter. The progress shown by the companies should by itself discount heavily the doubts entertained in the past as to the prospects of rapid Indianization on their systems. This is shown even more clearly by the statistics of the upper subordinates : the percentage of Indians advanced from 67 to 84 on the State lines and from 74 to 84 on the company lines.

The detailed figures shown in the table do not support the view that state management has secured a more accelerated pace of Indianization. The State railway figures certainly stand higher on certain systems, and disclose a difference of 5 per cent in their favour as compared with the company lines. The acceptance of a definite policy of Indianizing the superior services and the efforts of the Railway Board in persuading the companies to fall into line with this policy are mainly responsible for the almost similar results in the two groups. But this, be it noted, is due more to Government policy than the type of management. On the other hand, state management has certainly made it possible for Indian officers to hold the highest appointments on railways, such as General Manager, heads of departments, etc. On the company-managed lines, instances have been rare of Indian officers rising to the position of even heads of departments. The Acworth Committee's comment on this point seems to hold good even now on these

TABLE 117. STATISTICS OF THE PROGRESS OF INDIANIZATION

	European				Indian			
			% of total				% of total	
Railways	1925	1937	1925	1937	1925	1937	1925	1937
			Officers					
State-managed :								
Burma	90	71	86	74	15	25	14	26
E.B.	79	51	63	43	46	68	37	57
E.I.	227	139	72	46	87	161	28	54
G.I.P.	175	139	79	65	46	76	21	35
N.W.	192	123	66	46	101	145	34	54
Railway Board, etc.	59	42	70	55	25	35	30	45
Total	822	565	72	53	320	510	28	47
Company-managed :								
A.B.	52	35	85	51	9	33	15	49
B.N.	170	106	77	56	51	83	23	44
B.B.&C.I.	159	110	82	65	35	60	18	35
M.&S.M.	122	84	85	61	22	53	15	39
S.I.	93	63	82	51	21	60	18	49
Total	596	398	81	58	138	289	19	42
			Upper subordinates					
State-managed :								
Burma	28	19	9	5	290	355	91	95
E.B.	143	56	34	14	274	356	66	86
E.I.	859	343	44	18	1,114	1,550	56	82
G.I.P.	286	212	23	17	957	1,032	77	83
N.W.	401	222	33	17	829	1,122	67	83
Railway Board, etc.	..	2	..	..	..	229	..	..
Total	1,717	854	33	16	3,464	4,644	67	84
Company-managed :								
A.B.	22	13	23	12	73	100	77	88
B.N.	333	119	37	14	556	711	63	86
B.B.&C.I.	155	170	17	18	784	771	83	82
M.&S.M.	85	57	29	18	205	260	71	82
S.I.	63	26	21	10	233	243	79	90
Total	658	385	26	16	1,851	2,085	74	84

* *Railway Board's Reports*, Vol. I.

systems. A later start, and perhaps some prejudice, probably explains the reason for the time lag. But the clear declaration of Government policy has, on the general question of Indianization, led to the same results without any acquisition, and consequently policy, not management, is the important factor. The case for state management will therefore have to seek more secure grounds than the progress of Indianization.

(c) *Indian industries and stores purchases*

Public opinion, as stated earlier, was also suspicious of railway rates policy as it affected Indian industries. Towards

the end of the last war, Government were committed to a policy of industrial development, and, in the early twenties, to a policy of protection. Indian railways, which normally spend large sums of money on purchases of materials and stores, could, as in other countries, provide an important market for domestic industries. The Indian Stores Department, set up to place orders for materials required by Government departments, was expected to carry out the policy of encouraging Indian industries. Railways were desired to adopt the same procedure. The importance attached to this by the Central Legislature is clear from the specific recommendation made in the Separation Convention resolution urging on the Governor-General-in-Council the utilization of the Indian Stores Department for the purchase of stores for the State railways.[7]

While accepting the policy of Government, the Railway Board maintained their own organization on the different railways for the purchase of stores, and the Indian Stores Department was, until quite recently, left to handle only a bare fraction of the railway orders. When the state-managed railways strove to preserve some freedom in the matter of purchases, it is not surprising that the company-managed railways should be less keen on control from without. But the policy of Government on this question was clearly stated in these terms:

> 'to make their purchases of stores for the public service in such a way as to encourage the development of the industries of the country to the utmost possible extent consistent with economy and efficiency.'

In order to give effect to this policy the order of preference was specified as follows:

> 'First, to articles which are produced in India in the form of raw materials, or are manufactured in India from raw materials produced in India, provided that the quality is sufficiently good for the purpose;
>
> secondly, to articles wholly or partially manufactured in India from imported materials, provided the quality is sufficiently good for the purpose;

[7] The last clause of the resolution, Appendix A.

thirdly, to articles of foreign manufacture held in stock in India, provided they are of suitable type and requisite quality; and
fourthly, to articles manufactured abroad which need to be specially imported.'[8]

Raw materials obviously required no preference, and railways naturally purchased them locally. Where domestic enterprise in the manufacture of certain articles was developing to the point of supplying part at least of railway requirements, the earlier practice of obtaining imported products deprived it of the support of a local market which would have ensured its progress and expansion. It is here that Government policy was expected to contribute to the industrial development of the country.

The volume of stores purchased for the principal State-owned railways is considerable. The value of materials purchased during 1924-37 totalled Rs. 273·81 crores. Of this Rs. 137·50 crores represented the cost of indigenous products. Approximately one-half of the balance of Rs. 136·31 crores was spent on imported stores purchased locally, and the other half on direct imports. It is not easy to draw inferences from these total figures distributed over six years of active construction and seven depression years of attenuated programs and reduced expenditure. Statistics of percentages of the value of indigenous materials to the total reflect in general the proportion of the raw materials to the manufactured goods, and do not indicate any large displacement of imports by domestic production. But the change in this direction has started: the increasing reliance on local manufacture under such items as rails, bridgework, etc., and the adoption of rupee tenders appear to be accelerating the process.

As public opinion a generation ago expected from state management a substantial assistance to Indian industries, it is interesting to compare the record of the state-managed and the company-managed railways as regards the purchases of stores. Taking the figures of four state-managed lines

[8] Government of India Resolution, No. S.217 of 12 December 1929, Department of Industries and Labour to take effect from 1 January 1930.

and five company-managed lines during 1924-30, the value of stores purchased by the two groups was distributed as shown in Table 118.

TABLE 118. STORES PURCHASED DURING 1924-30*

(In crores of rupees)

Railways				
State-managed :	A	B	A + B	C
E.B.	1·84	1·98	3·82	5·97
E.I.	8·89	6·94	15·83	14·04
G.I.P.	12·38	5·92	18·30	7·38
N.W.	7·13	6·76	13·89	17·28
Total	30·24	21·60	51·84	44·67
Percentage of total	31	23	54	46
Company-managed :				
A.B.	0·98	0·62	1·60	1·61
B.N.	5·18	5·00	10·18	7·00
B.B.&C.I.	6·26	3·00	9·26	7·86
M.&S.M.	5·38	1·73	7·11	4·09
S.I.	5·70	1·65	7·35	2·99
Total	23·50	12·00	35·50	23·55
Percentage of total	40	20	60	40

A direct imports, B imported stores purchased locally, C indigenous products.

* *Railway Board's Reports*, Vol. I.

The cost of stores of indigenous origin was 46 per cent on the state-managed lines and 40 per cent on the company-managed systems during 1924-30. The proportion is undoubtedly higher on the former, but the company-managed lines are not far behind.

The drastic curtailment of works and partial postponement of current maintenance during 1931-7 led to a corresponding decrease in purchases of stores and the figures for the period hardly reflect normal conditions. The value of stores purchased during 1931-7, summarized in Table 119, discloses a higher proportion of indigenous products than during the preceding period and it is interesting to see that the percentages of the company-managed lines are not far below those of the state-managed systems. But as the figures reflect the effects of the postponement of ordinary repairs and maintenance and the consequent reduction in the purchase of imported stores,

the relative increase in the proportion of indigenous products may have been exaggerated.

TABLE 119. STORES PURCHASED DURING 1931-7*

(In crores of rupees)

	State-managed railways				*Company-managed railw*			
	A	B	C	% of C to	A	B	C	% of C
	Rs.	Rs.	Rs.	total	Rs.	Rs.	Rs.	tota
1931-2	1·03	2·92	5·48	58	1·41	1·28	3·87	59
1932-3	0·09	2·26	3·95	63	0·79	1·07	2·88	61
1933-4	0·07	2·51	4·95	66	0·66	1·13	2·66	60
1934-5	0·05	2·57	5·43	67	1·11	1·46	3·52	58
1935-6	0·06	3·37	6·14	64	1·24	1·32	3·44	57
1936-7	0·05	2·59	5·33	67	1·18	1·18	3·30	58

A direct imports, B imported stores purchased locally, C indigenous products.

* *Railway Board's Report* 1936-7, Vol. I.

Can it be argued from these facts that State operation has been more satisfactory than company-management? If the uniformly higher figures shown by the former are taken to suggest its superiority, the company lines also, it should be noted, have approximated to the same levels. Had the record of the latter been different, the anticipations of the advocates of state management would have received conclusive proof in these figures. Here also the policy of Government and the efforts of companies to give effect to it have secured nearly identical results.

(*d*) *Regard for public opinion*

One of the reasons behind the demand for state management was the conviction among Indian politicians and business men generally that an executive department of Government operating Indian railways would be more amenable to popular control through the Central Legislature and more disposed to meet public requirements than a company-managed administration tempted to take shelter under its contracts and responsibility to a London directorate. There were certainly instances in the past when scant attention was paid to public opinion and the companies could do what they pleased. The cases of the Broach block rates and the Pallivasal project have already

been mentioned. The Acworth Committee referred in detail to the allegations of undue preference and unfair competition with waterways, complaints regarding owner's risk rates, bribery in connexion with the allotment of wagons, and slackness in the settlement of claims. No less urgent were the grievances of the third class passengers. Many of these complaints were removed by measures instituted since 1924. The appointment of the Railway Rates Advisory Committee provided a machinery for the adjustment of rates disputes, while the Railway Department answerable to the Central Legislature would certainly not permit such flagrant instances of public disservice to recur. The statistics of payment of damages and claims have, as we have seen, shown a remarkable decrease, and the prevalence of bribery has been less frequently mentioned than before. Similarly, the complaints of the third class passengers were sought to be removed through the regular program of improvements and facilities included under the open line works on all railways. All these measures have wrought a great change in the rail transport situation. With the acceptance of the policy of state management, the Railway Board have been able to place greater emphasis on public needs and service than the profitability of the investment—a factor which undoubtedly weighs more with a private undertaking.

These changes have certainly effected a striking improvement as compared with the state of affairs in the preceding period. The principal agency in inaugurating these measures is the Railway Board, which as the Railway Department of the Government of India endeavoured to carry into effect their policy in harmony with the wishes of the Central Legislature and other organs of public opinion. But the trader or the passenger has to transact his business not with the Railway Board but with the individual railway administrations. It would, therefore, be interesting to inquire as to the extent to which the state-managed administrations respond to public opinion and whether the change in management has denoted a gain to the public from this point of view.

An instance in point is afforded by the history of the rates system, a subject of intimate concern to the trading community. Despite public representations over wellnigh two decades and the specific references by the Railway Rates Advisory Committee, such defects as the unsatisfactory basis of the risk rates and the terminal charges have continued unremedied. Whether dealing with state-managed or company-managed railways, on rates questions, the trading community, to quote the Wedgwood Committee, 'feel themselves burdened by a sense of helplessness to obtain a fair hearing.' In cases like these a state-managed administration has been no more successful in meeting the needs of business men than the company lines. But a state-managed administration has, unfortunately, its procedure decided by a higher authority—the Railway Board—and appears to exercise little effective discretion. The Agent and General Manager of a company-managed railway probably enjoyed greater freedom and initiative. This, of course, is not the fault of state management but rather of the undue centralization of the administrative control and the bureaucratization which it has brought on its heels.

While, therefore, a State railway administration may well prove the despair of the business community in certain matters, it is possible that the Railway Board, when persuaded of the necessity, may carry out improvements in service facilities and remove specific grievances on the state-managed lines more readily than might have been possible on the company-managed systems such as the Bengal & North Western—a railway which figured quite frequently in Assembly debates. In other respects the practice of company-managed railways has tended to keep pace with that on the State lines. In actual practice the public would have found little to distinguish between the State and company lines considered individually. The fact that the Railway Board can issue directions to the former which have to be carried out makes their position different. In the case of the companies, their contractual rights must be respected. Broadly speaking, the Government could only prevent, and their power of initiative

was strictly limited. The companies could not be required to carry out works on grounds of convenience or economy, if they are not needed for safety. Nor could the State prevent the retention or appointment of an unsuitable officer.[9] On important matters in recent years, the Board have, as we have seen, exacted obedience from the companies to their policy and could, on behalf of the public act with equal effect in other matters also. In the last resort the State could compel acceptance by legislation,[10] as it has done in the Hours of Employment Regulations, Payment of Wages Act, etc. If, therefore, there were lapses or omission to introduce measures as on the State lines, the reason was inaction or reluctance to interfere on the part of the Board.

It is fair to conclude that the earlier anticipations from state management have in substance been realized. But the company-managed railways have emulated the example of the state-managed systems so successfully that the contrast is less striking than might have been expected. A clearer definition of the policy of Government on the questions raised and a more energetic Board keeping a watch on the administration of that policy have secured results which must be deemed on the whole not unsatisfactory on the State and company railways alike.

We may now examine whether the apprehensions of the opponents of state management have been borne out by the record of operation since 1924. The signatories of the alternative report of the Acworth Committee referred to the adverse effects of state management on administrative efficiency, the disregard of public opinion, and lack of initiative and flexibility.

CRITICISM OF STATE MANAGEMENT

The principal objection raised against state management is on the score of administrative efficiency. The decentralization of powers and delegation of responsibility for management, so essential to the successful conduct of a business undertaking,

[9] *Acworth Committee Report*, paras 137-8, p. 46.
[10] Ibid.

are not so readily permitted under the State procedure. The separation of railway finance was designed to confer autonomy on railways. But the administration of the state-managed railways, as it has come about, does not reflect that real responsibility which should be exercised by a commercial undertaking. Thus the responsibility for administration in the case of state-managed railways does not unfortunately rest with the General Manager, as was partially the case with company-managed railways. The administrative head of a State railway appears to be, in effect, more an *agent* of the Railway Board than the General Manager of his undertaking. Under the present system, he is helpless to protect even the legitimate requirements of his line or to protest against the interference of the Railway Board. As he is subordinate to the Board his position precludes his taking an independent attitude. The financial repercussions of the actions of the Railway Board may affect the net return or the earning capacity of his railway, but the General Manager is only a cog—a major cog admittedly—in a gigantic bureaucratic machine. He cannot have that compelling interest in safeguarding the dividend-earning capacity of his system, such as the General Manager of a company-managed railway is obliged to have. A Clearing Accounts Office or a Central Publicity Bureau can be bolstered up at heavy cost by the fiat of the Railway Board, and the cost apportioned among the state-managed railways regardless of whether individually they can afford the luxury or not. A General Manager, whose independence is curbed at every turn and has things decided for him, cannot be blamed if his administration lacks initiative and degenerates into mere routine. This is all the more pertinent when the normal tenure left to him before retirement hardly averages three or four years!

This comes of the application of the ordinary civil service regulations and practice, which the Acworth Committee pronounced as 'entirely unsuitable' for application in so specialized a concern as a railway. 'The relations between the employer and the staff,' they pointed out, 'should be more in conformity

with ordinary commercial practice.'[11] Short-time transfers on grounds of seniority from one railway or department to another were criticised as not conducive to efficiency, but such tendencies during recent years have been frequent enough to call for comment. The effects of the civil service regulations on the railway staff—even to the responsible segment—must be considered deplorable. The rules of recruitment may ensure the right type of candidate but when he enters service, the sheer inertia of years carries him to the top or as near it as possible. Each cadre of service gets transformed into a caste, a kind of service loyalty is developed, and a vested interest is created. Each member claims a right to the preservation of the 'conditions of service'—the number of appointments and key appointments reserved to the service. Each service tries to increase its claims and quota. The jobs as with Government service everywhere are safe, and as once a person completes his probation, the automatic increments of the time-scales are what he is entitled to, the only incentives left are the prospects of an out-of-turn promotion to a vacancy. If the top positions are held by comparatively younger men, there is 'stagnation' in the service; which can be got over only by creating more appointments. If 'special' duties and leave vacancies cannot solve it—if the number involved is larger —new posts are created and maintained by expanding the departments or splitting up the service. The Controller of Railway Accounts and his establishment, costing Rs. 3·5 lakhs a year, was maintained for ten years after the Railway Retrenchment Sub-Committee had urged its abolition on grounds of economy. Service requirements probably rendered the department superfluous, and it was abolished recently.

This obsession with service prospects can be checked only by a strong Railway Board applying strict business principles to the administration of railways and making the General Manager responsible for carrying them out. But the Railway Board, themselves, are unfortunately infected with the same

[11] *Acworth Committee Report*, para 135, p. 45.

virus, as their own personnel is drawn from the individual railways and the Finance Department. The Chief Commissioner and Members, coming from the different State railways, all belonging to the same brotherhood and with the same community of interest, are responsible not to a board of directors answerable to a shareholders meeting, but to another official, a Communications Member belonging to the same bureaucratic machinery.[12]

The mischief of the bureaucratization has not stopped with its spread to the state-managed railways. By a spirit of emulation or suggestion it infected the company-managed railways as well. All these may not be a necessary concomitant of state management. As Sir William Acworth and his four colleagues observed :

> 'When the railway administration has attained independence and has established the necessary machinery for closer local supervision, it (the practice of rigid adherence to seniority, frequent transfers, etc.) ought not to be continued so far as railways are concerned. So injurious is the system, that, if we had believed it must necessarily be permanent, those of us who have recommended the adoption of a state management policy would have hesitated longer before doing so '[13]

Railway administrations certainly failed to acquire that independence on which the Acworth Committee had reckoned and the doubts of the opponents of state management have been confirmed by the experience of the last two decades.

Turning now to the question of the regard for public opinion under state management, we have already seen that both groups have shown approximately the same record. But the public feeling has been that their demands are likely to be more easily met on the State railways than on the company-managed lines. But it is necessary to bear in mind that the signatories of the alternative report of the Acworth Committee compared state management not with the operation under the surviving companies but with that of the Indian domiciled companies they had recommended. Discussion as to what might have

[12] During 1924-42, there was for a short period only one non-official Member for Railways. The others, five in number, belonged to the Indian Civil Service.

[13] *Acworth Committee Report*, para 136, p. 46.

happened may now sound academic, but there can be no doubt that the economic incentive of a private undertaking will make it respond more promptly than a State department to the needs of the public.

The third charge against state management is the lack of initiative and flexibility. As the guaranteed companies were not true private undertakings and were subject to detailed Government control over a considerable range of railway operations, they did not exhibit any striking difference as compared with the State lines. Still the companies appear to have used the little freedom they enjoyed from State interference to promote the interest of their undertakings and therefore of the public. It is significant that company-managed lines had taken the initiative in the matter of the manufacture of locomotives in the country. The East Indian Railway Company used to build some of the broad gauge locomotives in their own workshops at Jamalpur, which were pronounced not inferior to the imported stock and were built at a cost which compared very favourably with the latter. It is no less significant that production ceased with the commencement of state management. Again it was another company line, the Bombay Baroda and Central India, which pioneered the way to the production of the metre gauge locomotives. Other instances could be quoted where companies have shown better initiative. But State control of the company-managed railways did not permit any considerable deviation from the practice of the State railways. Hence has come about the comparative absence of the development of improved service and increased facilities which characterized inter-war transport activity in Great Britain and the United States.

CHAPTER XII

CONCLUSION

In the light of the discussion in the last chapter one emerges with a sobered sense of the achievements of state management. Its principal merit lies in the removal of complaints on account of which public opinion was deeply incensed against railways in the pre-separation days. The special attention paid to the convenience and requirements of the public has undoubtedly led to greater satisfaction. Under the influence and example of the State the company-managed railways also improved their record. State management appears to have placed greater emphasis on the political aspects, such as the policy of Indianization, stores purchases, etc. On the economic aspects of railway working, the record has not been equally impressive.

FINANCIAL RESPONSIBILITY

The financial results of the State-owned railways since 1924 are deemed satisfactory on the whole. But the facts set forth in previous chapters indicate the dangers to which state management is exposed. We have already seen how the effects of the extravagant capital expenditure and the overcapitalization during the depression period left a heritage of deficits and financial difficulties. Again, under the present regime, the financial status of certain systems—the B.N. and E.B., for example—suffered deterioration. The upward trend of expenditure and higher operating ratio have

persisted throughout, and the fact that the State, with its enormous resources, was behind the railways materially weakened the profit-earning motive. The position was further complicated by the existence of companies which had but limited interest or stake in our railways. The guarantee they had against loss not infrequently resulted in undermining the economic incentive. The prospect of profits in excess of the guaranteed interest was likely to encourage administrations to practise too much economy, while the likelihood of a return less than the guaranteed rate tended to create indifference. This called for a special effort to avoid the temptation to swing to either of these extremes. As the companies had their contracts long before the new arrangements under the convention came into force, their relations with the controlling authority of the Government of India on financial matters continued to be regulated as before.

The present system of state management exhibits certain features which militate against successful working. Although the railway systems are strictly under the direct control of the Railway Board, they are treated as independent units as regards the details of administration. On a variety of matters they function as an entirely separate entity, such as in regard to rate-making, organization, jurisdiction, appointments, etc. The delegation of large powers and the right to be treated as a separate system ought to carry with it the responsibility for producing satisfactory results. With its paraphernalia of separate organization, financial powers, internal autonomy and rates structure, the management is expected to assume the duty to so operate the system as to earn a net revenue sufficient to meet not only the interest but also the share of the contribution as fixed by the convention. The company-managed railways could not be subjected to such liabilities as their contracts were concluded many years before the present financial arrangements were put into effect and the interest of the State was protected by adequate safeguards. There could be no such justification for the omission of these obligations as regards the working of the state-managed

railways. According to the present methods of working, each system is not obliged to be so worked as to produce a net income sufficient to pay the interest on its capital and the share of contribution to the State. Even more regrettable is the omission of a provision imposing a cumulative liability in respect of the interest charges due but not paid in particular years by a railway system. It is true that not all railways are financially well-favoured: some serve economically rich and prosperous regions and others poor and backward areas. There are bound to be differences. But whatever the relative position of a railway, it has on economic considerations to be so worked as to earn the minimum return on the investment and ought to carry the liability on that account to be paid out of future earnings. The absence of any provision of this kind implies that there is no standard of performance which railways are expected to maintain and that the net revenue of the State-owned railways totalled up and featured in the railway accounts is only the residue of the profits of the successful lines after meeting the losses on the others. It is true that the Railway Board does exert its influence, as it has done during recent years to enforce a regime of economy and retrenchment, to effect the execution of certain policies. The fundamental defect of railway finance after the separation has been that the responsibility for the payment of the interest charges on capital and the contribution is that of the Railway Board only. This is not apportioned in its turn to the individual railways. The result is that a particular railway may go on incurring losses for years together without any qualms so long as the aggregate net income for all the railways is sufficient to pay for its own losses, interest and share of contribution to the State. The statistical analysis undertaken in connexion with the financial status of the different railways in an earlier chapter amply bears out this statement.

The only satisfactory method of ensuring economical and efficient management is to make each railway shoulder its own financial burdens. It appears to be very desirable that an

obligation to this effect is definitely fixed on each railway system. This is bound to change the outlook of those that before the World War II constituted the losing railways and make the control of the Railway Board far more effective than before. With so many railways of moderate size, the present administrative set-up may need to be changed and a regrouping and amalgamation of the lines to form a smaller number of larger systems may lead to financially strong and self-supporting units.

In other directions also state management has disclosed certain elements of weakness. The review of passenger and goods transportation indicated that state management has not been bold enough to tackle questions of far-reaching changes such as private enterprise has dealt with effectively and successfully in other countries. Public satisfaction has been sought through a lowering of charges or of relieving congestion. In fact, the record appears to have been negative rather than constructive. Disabilities and inconveniences may have been removed, but the improvement of transportation with a view to exploiting and extending the travel market has been on too timid a scale. This explains why Indian railways, when confronted with competition from road transport, appeared to rely more on restricting it than improving their technique as foreign railways have done. The inability of the Railway Department to face questions involving fundamental changes is shown by the reluctance to bring up the classification of goods and the rating system to modern requirements. This is again confirmed by the fact that it has not been able to make up its mind to revise the Indian Railways Act—enacted more than half a century ago, a period medieval in railway history as the Acworth Committee termed it. What a contrast with Great Britain and the United States which carried through during the twenties a large volume of legislation revolutionary in character and scope !

LABOUR POLICY

The labour policy under state management deserves to be commended. The period under review witnessed a general

improvement in the status and conditions of work of railway labour. It was overdue and it is doubtful if so rapid a progress would have been accomplished on both the State and company railways but for the special interest shown in this question by the Railway Board. The period was also characterized by the growth of trade unions and concerted action by them on matters affecting their interests. The demands of labour, particularly in the present economic conditions in India, are entitled to sympathy and consideration. But the situation may give rise to difficulties in the future. The relations of the State as the employer and labour may be harmonious when concessions—economically justified and fair—proceed from the former to the latter. But if anything happens to reverse the process, the employment of so large a labour force by the State may create a serious crisis. The alternative report of the Acworth Committee referred to 'the obvious objections, not to say the positive dangers, of making Government the sole employer of a vast labour force.'[1] The experience of other countries where the State had to deal with its railway employees has not been happy, and instances are not wanting where the Minister of Railways was even intimidated.[2] In the present state of politics in India, it will be wise to steer clear of dangers of this kind. The policy of acquiring the company-managed lines has solved one set of problems only to create others of grave economic and political import.

The existing system of state management is thus altogether inadequate to cope with the problems Indian railways have to face. A change is imperative, if only to remove the bureaucratization, red tape, departmentalism and other defects mentioned above. That the present organization is not suited was recognized during the consitutional discussions and a solution was prescribed in the Government of India Act, 1935, in the shape of a new Statutory Railway Authority.

[1] *Acworth Committee Report*, para 265, p. 76.
[2] Kirkaldy and Evans, *The History and Economics of Transport*, 3rd edn., p. 194.

THE STATUTORY RAILWAY AUTHORITY

That the future management of Indian railways should be different from the existing system was first proposed by the Government of India in their *Despatch on Indian Constitutional Reforms*. It was pointed out that there were non-economic considerations governing the administration of Indian railways, such as defence requirements and safeguarding of the rights of the services and of the Anglo-Indian community. The Government of India's *Despatch* explains many of the subsequent developments and provisions of the Act of 1935. Whatever the merits of these reservations, it will not be seriously disputed that railways constitute the arteries of the economic life of the country and that the economic aspects overshadow every other. Again, no one will question the reality and dangers of community pressure. The fact that on less important matters communal and provincial jealousies are coming to the fore is symptomatic of the difficulties that may have to be met. The main solution to all these problems will be found in ensuring the commercial management of the Indian railways. This is what has been attempted in the Government of India Act, 1935.

The Act provides for a new Authority to be set up, called the Statutory Railway Authority, consisting of seven members, to exercise the executive authority of the Federation in respect of 'the regulation and the construction, maintenance, and operation of railways.'[3] In carrying out their duties the Authority

> 'shall act on business principles, due regard being had by them to the interests of agriculture, industry, commerce and the general public, and in particular shall make proper provision for meeting out of their receipts on revenue account all expenditure to which such receipts are applicable under the provisions of this part of this Act.'[4]

To obviate the possibility of sectional interests exerting pressure on the administration through the legislature and the responsible minister, provision is made to appoint to the Authority only those who have had experience in commerce, in-

[3] Government of India Act, 1935, Section 181 (1).
[4] Ibid., Section 183(1).

dustry, agriculture, finance or administration and to exclude members of the Federal or Provincial Legislatures, those in the service of the Crown in India or a railway official in India or those who were serving as such within the period of one year.[5] Not less than three-sevenths of the Authority are to be persons appointed by the Governor-General in his discretion and the Governor-General shall in his discretion appoint a member of the Authority to be President thereof.[6]

In the discharge of their functions, the Authority are to be guided by such instructions on questions of policy as may be given to them by the Federal Government.[7] The danger of pressure from the Federal Government is safeguarded against by the extensive discretionary powers conferred on the Governor-General, and particular emphasis is laid on the relations between the Federal Government and the Authority —a matter on which rules are to be made by the Governor-General 'exercising his individual judgement but after consultation with the Authority.'[8] These provisions indicate the nature of the endeavour in the Act to establish a sound organization for the administration of Indian railways.

The criticism of the changes proposed will naturally centre round the Statutory Authority. From the nature of the developments in other countries the trend, even where private enterprise dominates transportation, is to substitute control by a public utility trust or a public trusteeship in place of direct State operation. The advantages claimed for the public utility trust are that 'it combines elements of socialization with aspects of private management, initiative and elasticity, that should be preserved.'[9] The establishment of the Authority therefore appears to be the logical and necessary outcome. From the constitutional aspect, railways are given autonomous powers within limits of the broad policies to be laid down by the Federal Government. The Federal Government

[5] Government of India Act, Eighth Schedule, para 2.
[6] Ibid., Section 182.
[7] Ibid., Section 183(2).
[8] Ibid., Section 184(1).
[9] Marshall E. Dimcock, *British Public Utilities and National Development*, p. 303.

are debarred from interesting themselves in the day-to-day administration and working of railways. Presumably, the Statutory Authority will appear before the public with the annual estimates of all State-owned railways and may not be obliged, as at present, to justify before the legislature its actions when questioned. There may be no presentation of the budget demands under the new regime nor consequently any voting on the estimates. The problem under such a situation is how to ensure accountability on the part of the Authority for the proper discharge of the functions entrusted to it. The warning uttered by Acworth deserves attention. The non-political body will neither be infallible nor impeccable.

> 'Evidently a commission which though composed of individuals personally clean-handed, is not strong enough to crush attempts at jobbery in its neighbourhood may be even worse for the public interest than a Minister who uses his patronage for political ends. For the Minister can at least be watched and exposed in Parliament by political opponents, while a commission can take shelter under the cloak of its statutory irresponsibility.'[10]

These views have been endorsed by others who have traversed the same ground. Mr. G. D. H. Cole in his discussion of public control of industry observes that a body of commissioners must be

> 'really responsible, not merely in a nominal sense to Parliament which sanctions their appointment, but to some public authority capable of co-ordinating their several activities, and defining for them the general course of policy which, as administrators, they are called upon to pursue. The system of independent commissioners is apt to work badly now, precisely because no such coordinating authority exists. They are in effect irresponsible; and the control of policy, which is not their job, as well as the control of administration, which is, rests in their hands. Parliament, in setting up the commission, gives it certain powers and prescribes certain functions and lines of policy. But, when once the commissioners are in being, they are left without any effective subsequent direction, save that spasmodic parliamentary intervention which does more harm than good.'[11]

[10] W. M. Acworth, *Historical Sketch of State Railway Ownership*, p. 90.
[11] G. D. H. Cole, *The Next Ten Years in British Social and Economic Policy*, p. 136.

Dr. Dimcock in his study of British public utilities is even more critical of the commission principle :

'As a result of experience, it may be found that the public utility trust is too far removed from Parliament to be effectively criticised and controlled in matters relating to important financial and labour policies. This form of organization is exposed to the pressure of interest groups, with the result that log-rolling and personal influence are hard to avoid. An appointed body, with no constituency to which it is effectively responsible, will be in danger of a dulled sensitiveness to public needs unless it is honestly and carefully chosen. Salaries, fees, and overhead costs that the average person would consider too high cannot be effectively prevented. Moreover, the creation of public boards all of which possess important differences, may render the processes of popular control so complex and indirect that real responsibility will be lost. The American system of independent commissions suffers from this defect. The London Passenger Transport Board appears to be especially subject to this possible weakness. Great Britain should hesitate a long time before seriously vitiating her most valuable constitutional principle—real responsibility for power bestowed by public authority.'[12]

Rt. Hon. Herbert Morrison, who was Minister of Transport in the second Labour Government, referring to the organization for the management of London Transport, stated :

'It must be a public body ; there must be public accountability of an appropriate form or forms ; . . . it must have a social conscience, a corporate spirit and a public purpose ; the legitimate rights of the consumer must be safeguarded ; so also must those of labour in the industry.'[13]

The limitations imposed on the future Federal Government of India and the legislature to preclude political influence take out of the picture the two agencies which normally enforce accountability. It is the existence of this principal defect which explains why, constitutionally speaking, the guarantee for efficient administration should be sought through the constitution of a tribunal with power of impartial review of the work of the independent Authority for the management of railways. The need for this is underlined by the economic aspects. After all, the questions of status, autonomy, etc., are secondary to the chief end for which transportation is

[12] Dimcock, op. cit., p. 303.
[13] Rt. Hon. Herbert Morrison, *Socialisation and Transport*, p. 148.

undertaken, namely, that of meeting the transport requirements of the nation with efficiency and economy and at reasonable and just rates. The proposed Authority will, it may be assumed, endeavour to do this to the best of their ability, but human nature being what it is, the responsibilities of an undertaking of continental dimensions may prove too great for this agency to attain the ideal. The average user must have some means of safeguarding his interests, ventilating his grievances and getting them redressed. The position of the trader in other countries is better protected. The Interstate Commerce Commission and the State Railroad Commissions in the United States, the Board of Transport Commissioners in Canada, and the Railway Rates Tribunal in Great Britain constitute sufficient guarantees that the interests of the users are taken care of satisfactorily. The provisions of the Government of India Act, 1935, have not developed a proper counterpart in the Rates Advisory Committee. The existing defects of that body are likely to be accentuated under the new scheme. The mere superimposition of a Statutory Railway Authority is not going to change everything. The Railway Board presumably will continue to function much the same as at present. The Statutory Authority thus amount to a buffer between the Federal Government and the executive administration of the railways. The present shortcomings, despite the control exercised by the legislature, are likely to be magnified by the recession of railways from the field of public scrutiny. This insulation of railways and the absence of an effective machinery to afford relief to the public render more difficult the task of railways in adapting their means to the nation's transport demands. Apart from such complaints which have been the subject of organized publicity as the wagon problem, coal freights, etc., there are bound to be many more of less publicity value, though not necessarily of less economic significance. It is from this point of view that the incorporation of the current procedure regarding the Rates Committee is to be deemed unfortunate. The original intention of transforming the com-

mittee into a tribunal, as in Great Britain, received the support of such practical and experienced railwaymen as the late Sir Clement Hindley. When the proposal for the revision of the Indian Railways Act was mooted, there was striking unanimity of opinion among the Chambers of Commerce in the demand for a tribunal. The failure to explore the possibilities of some such institution in connexion with the constitution of the new railway organization appears to be the most serious omission in the Act.

The Act has also failed to take into account the administration of railways with reference to other types of transport. The emergence of road motor transport causing a large-scale diversion of traffic from rail to road has raised a new problem. The competition railways have experienced is not confined to the road. The striking progress of commercial aviation in recent times, as shown by the ever-increasing traffic handled, provides another factor. Developments during the World War II have extended considerably the scope for commercial aviation and therefore for post-war competition. Railways have lost their monopoly position and have to seek their traffic in what has become a competitive market. It is not merely a case of competition and loss of traffic. There are other questions raised, such as the relative distribution of overt or disguised subsidy to the different types of transport, and railways often point to the differential situation in which they find themselves as compared with road transport, which has no responsibilities for the construction and maintenance of roads. The implications of transport competition and the policy to be adopted in connexion therewith have been neatly summed up by the late Joseph B. Eastman as Federal Co-ordinator of Transportation, in his report to the Congress:

'The ultimate objective is, of course, a system of transportation for the Nation which will supply the most efficient means of transport and furnish service as cheaply as is consistent with fair treatment of labour and with earnings which will support adequate credit and the ability to expand as need develops and to take advantage of all improvements in the art. This system of transportation must be in the hands of reliable and

responsible operators whose charges for service will be known, dependable, and reasonable and free from unjust discrimination.

To attain this objective, it is clear that there must be some centralized control which will concern itself with planning and prevention as well as with the cure of evils after they arise. It must deal with the future provision of new facilities, with the proper coordination of those which exist, and with the development of sound general policies affecting both service and rates; prevent unnecessary duplication and waste; promote the use of each agency of transportation, in cooperation with the others, primarily in the service to which it is economically best adapted; check the forms of endless chain rate cutting or service promotion which have come to be known as destructive competition; and protect the public against unreasonable charges and unjust discrimination.

As a further part of this work of planning, prevention and coordination, attention must be given to public as well as private expenditures, and to the extent to which various forms of transportation are, through such public expenditures or otherwise, in effect subsidised by Government. It is conceivable that such subsidies may in some situations be justified, and also that where they have been granted in the past it may be impracticable to rectify the situation now; but certainly we should know what has been and is being done in this respect, correct all conditions which are unjust and capable of correction, and understand the consequences of what may be done for the future.'[14]

The most important feature in current discussions on the subject of transport competition is the unanimity of opinion in favour of a national agency invested with power to control and coordinate all forms of transport. The pressure of economic forces has impaired the individuality of each type of carrier and it has become impossible for one form of transport to resist influences coming from others. Emphasis is now placed on transportation rather than on the particular carrier which undertakes it. 'The primary requirement,' as Mr. Harold G. Moulton and his associates of the Brookings Institution observe, 'is that traffic actually move by the particular transport agency or agencies which can carry it, all elements of cost considered, in the most economical and serviceable way.'[15] Such a treatment implies two things: an

[14] Report of the Federal Coordinator of Transportation, 1934, 30 January 1935, pp. 8-9.

[15] Harold G. Moulton and others, *The American Transportation Problem*, p. 881.

economic parity for all forms of transport and a properly integrated national transport system. The State whose intercession is sought to protect railways from the effects of unrestricted competition has to make sure that its intervention will not delay the natural process of adaptation to the more efficient means. A wise government in a time of change, as has been rightly pointed out, will seek to minimise the losses due to transition. It should of itself interpose no obstacles to the choice of effective machinery or to the partial or entire elimination of the unfit.

The setting up of a national authority will provide the machinery to apply the principles stated above and ensure that the transport organization of the country will render efficiently and economically the service required. The present situation calls for the creation of a controlling authority to weld the different types of transport into an organic entity capable of meeting the nation's demands, minimising ultimate real costs and bringing about a gradual transition to specialized operation. Only a properly constituted national authority can shoulder these tasks satisfactorily.

This brief discussion on transport policy indicates the character of the policy required to meet present conditions in India. Before considering the measures to solve our problems, however, reference may be made to certain special features of the transport situation. Thanks to the time lag arising from a delayed economic development the position in India has not become so acute as in some countries. But forces have been operating in the same direction and compelling closer attention than before to transport problems. The data released in the thirties by the Mitchell-Kirkness Report, the Road-Rail Conferences, the Road Development Conference, and the reports of the railways themselves, indicate that Indian railways experienced on a smaller scale the difficulties met with in other countries. With the expansion of air and road transport the immediate future holds revolutionary changes in the system of communications. The problem thus calls for the establishment of an administrative and regulatory

machinery in anticipation of these developments. There is always friction to legislation trying to overtake economic changes from pressure groups and vested interests depending on the maintenance of the *status quo.* The social costs in countering opposition already encouraged by these interests —the fall from the optimum unavoidable in compromise and the waste of endeavour in attempting to circumvent difficulties thus engendered—indicate how much there is to be gained from preparation made in advance to meet the changes that are impending.

From this point of view the attempt in the Government of India Act, 1935, to deal with the railway problem alone to the exclusion of other forms of transport is short-sighted. It ignores the dynamics of the transport situation in which competing carriers with their gradual organization are likely to intensify the difficulties for railways. A Federal or Central Authority empowered to deal with the practices and policies of all forms of transport seems to be an inevitable concomitant of these transport developments. The only satisfactory plan in the circumstances is the establishment of a National Transport Authority to deal with all forms of transport in place of the contemplated Statutory Railway Authority. The railways will acquire rather than lose importance. With their elaborate organization and experience of decades with complex problems of large-scale transport and regulation, they would bring to such an authority technical experience, qualities and judgement not easily available in this country. Only a Transport Authority on this basis dealing with all the carriers can ensure the elimination of sectional pressure on railways and other forms of transport.

There is yet another question raised by the extension of provincial autonomy. Roads and road development, according to the legislative lists, are under the direct control of the provinces. The provincial psychology needs to be appreciated. The average citizen in the province feels that roads and road carriers are within the orbit of his influence. He knows that he could, by proper pressure, get the roads con-

structed and make the road carriers conform to his requirements. The Motor Vehicles Act, 1939, which seeks to bring about uniformity of standards and practices in the provinces is administered by Provincial Governments. He feels, therefore, that road transport is amenable to his influence and in greater accord with his immediate local demands and limitations than a railway which owes allegiance to a Federal Authority, situated probably far from his province. Railway administrations obey the behests of this authority, but the road transport undertakings must be prepared to please him if they expect his patronage and business. Any future proposal to bring road transport under the jurisdiction of a Federal agency may meet with opposition, even resentment. Besides the possibility of antagonizing provincial opinion, Provincial Governments themselves may not be keen on parting with their control of the roads in favour of central control. The omission to take these factors into account in the Government of India Act, 1935, is therefore likely to create difficult situations before long.

The immediate future appears to be one of more intensive development of roads. The program is likely to bear the impress of central planning with emphasis laid on national rather than provincial requirements. Some kind of central control appears to be unavoidable in view of *inter*-provincial as distinguished from *intra*-provincial traffic and of its co-ordination with rail transport. A National Transport Authority is obviously the agency which can take over this responsibility. To the existing Railway Board may be added three other boards under the Transport Authority for road, air, and water transport. The general relation of the Authority to these boards will be the same as that to the Railway Board. The Railway Board controlling the State-owned railways will constitute a single centralized executive organization for rail transport. The executive administration for roads and inland water transport may have to be shared between the Government of India and the Provincial Governments. A central control is necessary for air and marine transport.

If the developments outlined in these paragraphs are feasible, the constitution of the Railway Rates Advisory Committee must be overhauled. The need to transform this body into a tribunal has already been stated. With the increasing importance of competing carriers, the interests of users will need to be protected in the matter of rates, service and facilities. The ideas of reasonableness in these cases will have to be related to those on the railways. In view of the considerations set forth above it will be an advantage to reconstitute the committee into a tribunal to deal with disputes arising in connexion with all forms of transport. The analogy of the Canadian Board of Transport Commissioners supplies an instructive example to this country. But in view of the transport systems of Indian *States* also coming into the picture in the Federation, the tribunal may find it profitable to follow the procedure of the American Interstate Commerce Commission in the adjudication of disputes in connexion with inter-provincial-*State* traffic.

Conditions in India are different from those in other countries where transport facilities have exceeded demand. In contrast with the situation in Europe and America, we still look forward to further development of both railway and other forms of transport. The danger of losses due to economic mistakes becomes therefore all the more real. The Mitchell-Kirkness report revealed how railway facilities were rendered redundant owing to road motor competition as a result of parallel alignment of the two routes. Such risks are particularly great during a period of economic development and expansion. Hence the need to think in terms of national requirements, rather than in terms of each transport enterprise. A cautious policy is all the more necessary in a large country like India with general poverty all round and with limited reserves of capital to be risked in expensive experimentation, particularly at a time when growing industries need all the financial resources available. Planning for national transport is necessary for a country of vast proportions to meet the claims of different provinces and localities in order

of their relative importance in the nation's economy. There are considerable differences between one province and another as regards railway and road milages. These inequalities have to be rectified according to the requirements of each province after a comprehensive survey of the present and prospective transport needs of the country and of the facilities to meet the demand. A Transport Authority representative of all the interests concerned will be indispensable for carrying out the programs of development in accordance therewith.

RAILWAY REGROUPING AND AMALGAMATION

While a National Transport Authority is the obvious agency to deal effectively with the larger questions of transport policy and competition, its success would be limited by the efficiency of the internal organization of each form of transport. Railways, the most well-organized of all forms of transport in India, suffer from two features which are likely to hamper their ability to meet national requirements with the maximum economy in social costs. One is the comparatively small size of the Indian railways; and the other is the uncertain financial autonomy enjoyed by them.

The relatively small size of the Indian railway systems has attracted the attention of most of the committees which have dealt with railway finance since 1920. This is not surprising as many foreign railways, as shown in the accompanying table, operate a total milage much larger than that worked by most of the Indian railway systems. The fact that with the exception of the North Western, all the other lines have a route milage substantially less than that of many foreign railways makes out a *prima facie* case in favour of railway amalgamations in India. The present systems have retained their integrity as separate systems owing to the special conditions under which railway development was encouraged in the past. The contractual rights of the guaranteed companies which managed the majority of the lines in the past favoured their continuance as separate systems. But this need not have stood in the way of regrouping of the

COMPARATIVE MILAGE OF RAILWAY SYSTEMS (1937)*

Foreign railways	Milage	Indian railways	Milage
London Midland & Scottish	6,894	A.B.†	1,306
London & North Eastern	6,372	B.&N.W.‡	2,108
New York Central	11,314	B.N.	3,392
Pennsylvania	10,708	B.B.&C.I.	3,512
Chicago Milwaukee, St. Paul & Pacific	11,097	Burma	2,060
Atchison, Topeka & Santa Fe	13,511	E.B.†	2,010
Baltimore and Ohio§	11,269	E.I.	4,391
Van Sweringen§	28,411	G.I.P.	3,727
Southern Pacific§	14,485	Jodhpur	1,055
Canadian Pacific	17,223	M.&.S.M.	3,230
Canadian National	23,707	N.W.	6,946
New South Wales	6,124	R.&K.‡	570
Queensland	6,567	S.I.	2,532
South African	13,620		
German State	33,878		
Italian State	10,540		
Japanese State	10,890		

* The figures for foreign railways taken from official sources.
† The A.B. was merged in the E.B. in 1941 as stated in the text.
‡ After acquisition by the State in 1943, the B.&N.W. and R.&K. were combined to form the present Oudh & Tirhoot Railway.
§ Dr. W. M. W. Splawn's figures on the basis of stock ownership, taken from D. Philip Locklin's, *Economics of Transportation*, p. 85-6

different railways to form larger administrative units. The Acworth Committee, with the British experiment fresh in their minds, suggested the creation of three divisions, the Western, Eastern and Southern.[16] The Inchcape Committee appeared to favour the creation of five groups.[17] A decade later the idea of amalgamation was approvingly referred to by the Wedgwood Committee,[18] who contemplated the absorption of the Assam Bengal into the Eastern Bengal—carried out in 1941 to form the present Bengal Assam—and of the Madras and Southern Mahratta into the South Indian when

[16] *Acworth Committee Report*, p. 41n. The Western division would include the G.I.P., B.B.&.C.I., N.W., and Jodhpur-Bikaner Railways together with the ports and the branch and feeder railways in their area; the Eastern division would include the E.I., O.&R., B.&N.W., R.&K., A.B., B.N., and E.B. Railways together with ports and local railways as above; and the Southern division would include the M.&S.M., S.I., H.E.H.Nizam's and Burma Railways together with ports and local railways as above.

[17] According to S. C. Ghosh, the groups were: the Southern group, consisting of the M.&S.M. and S.I.; the Western group, consisting of the G.I.P. and B.B.&C.I.; the Eastern group consisting of the E.I.(and O.&R.), B.N. and E.B.(B.G.); the Northern group consisting of the N.W.; and the Trans-Ganges group consisting of the B.&N.W. (including Tirhoot), E.B.(M.G.), A.B. and R.&K.—*Indian Railway Problems*, p. 177.

[18] The Pope Committee also referred to the question of amalgamation. For the views of the Wedgwood Committee on the subject of amalgamation, see the *Report*, Chapter XIII, pp. 118-22.

their contracts expired. The program of regrouping and amalgamation need not have awaited the normal termination of the contracts of all the companies in view of the British experience of reorganizing the twenty-seven constituent and ninety-seven subsidiary companies with their thousands of shareholders to form the four main-line systems. The difficulties could not be greater in India with the State holding the preponderating share and the companies having only a fractional interest in the property.

The compelling motive for amalgamation is the same as that observed in other industries : the elimination of what, in the aggregate, amounts to a considerable waste unavoidable in a multitude of small undertakings. The substitution of a single management to control several railways independently operated previously leads to large-scale economies. By cutting down the duplication of administrative offices, passenger terminals, goods sheds and marshalling yards at all important termini, a substantial amount of expenditure may be saved. The existence of separate managements calls for the apportionment of trackage rights, joint station facilities and other inter-railway arrangements entailing an elaborate and expensive system of accounting and a fertile source of disputes and interminable negotiations. All these are rendered unnecessary by placing the railways concerned under a unified management. These considerations have led to consolidation of railway systems in other countries. Within the last quarter of a century the movement towards unification has gained strength. In 1938 pre-war France effected the consolidation of the two State railways and five main line companies into a single organization under *La Societe Nationale Chemins de Fer Francais.* The question of combining the Canadian Pacific and the Canadian National has aroused considerable interest in the Dominion. The Transportation Act, 1920, and later legislation in the United States have also accepted the principle of consolidation as a definite policy to be encouraged among American railways. A second motive for favouring a larger system is that the improved financial stability of the combined

organization would stand the strain of competition more successfully.

There are additional arguments in favour of railway regrouping in India. Under the present system, each railway, though State-owned, naturally tends to look to its financial interest alone, ignoring the larger interests of the country. The result has been the impossibility of devising a telescopic rating system on continuous milage and the extraordinarily individualistic tariff structures, as already referred to. A regrouping of the lines into a smaller number of financially self-supporting systems calculated not only to lead to large savings and eliminate the wastes and anomalies in the present system, but also to render each group more responsible for the operating results. The starvation of certain systems from capital improvements because they cannot pay their way and extravagance on the others because, serving economically richer regions, they can always show some profits, will be corrected. Looking further ahead, railways will have to continue to improve their equipment and services, such as through the use of light-weight stock, low-alloy steels, new types of carriages and other products of scientific developments, which contribute to the improvement of facilities, decrease of costs and reduction in rates, and thus fortify themselves in the competitive struggle with road and air transport. The consolidation of railways will help them to carry out these measures effectively. In view of the consummation of complete state management of railways, the process of amalgamation presents fewer difficulties than might have appeared twenty years ago.

FINANCIAL AUTONOMY UNDER THE RAILWAY CONVENTION

The record of State management of railways since 1924 has justified the wisdom of the policy underlying the Separation Convention. The grant of financial autonomy to railways, permitting them to manage their affairs as best they could subject to the obligations to the State being met—in respect of the capital provided—not only enabled them to carry out

a systematic and continuous program of expansion and improvements, but also to keep off political interference in the details of administration. But the main reason for the adoption of the convention was the fact that railways could not hope to get a square deal so long as they were dependent on the Finance Member and the vicissitudes of general finance. The separation of railway finance was meant to meet this criticism. The arrangement, as we have seen, worked satisfactorily till 1931, but since that year, though the forms have been observed, the financial autonomy of railways has ceased to exist. The attempted cancellation of the loans from the depreciation fund, the resort to the moratoria and the general policy of Government during the thirties paid scant respect to the principles of the convention. The separation of finance amounted to hardly more than a mere separation of the railway estimates and not the financial autonomy it was supposed to represent. The Finance Member, not the Railway Member, had the final word on the financial policy of the State-owned railways.

It is thus clear that the convention failed to achieve the principal object for which it was adopted. The fact that the present arrangements rest only on a convention between the Assembly and the Government has exposed it to changes dictated by the exigencies of national finance, by expediency rather than principle. The constitutional position was not unfavourable to its successful working, for there could be no question of any party in power reversing the policy to serve any political interest. If the bureaucratic machinery of the Government of India, entirely free from the influence of pressure groups, could not resist the temptation of weakening the authority of the convention, the danger in the future with a Government dominated by important political groups in the country is even greater. The incorporation of the provisions of the convention in the Railways Act will afford a more effective safeguard to railways against similar interference on the part of Government in future.

The provisions of the convention also require revision. The working of the present convention was intended to be

reviewed after three years but on one ground or another the question has been postponed from time to time.[19] It was taken up again in 1943 in earnest, but unfortunately the investigations required in connexion therewith could not be undertaken under war-time conditions, and consideration of all matters connected with the revision, with the solitary exception of the change in respect of the distribution of the surplus, had again to be abandoned for the duration.[20] As a comprehensive review of all questions connected with the convention may be expected early in 1946, we may call attention to certain shortcomings tending to weaken the present basis of railway finance. Among the various suggestions offered in the previous pages the most important is the fixation of the liability for the payment of the interest charges on each railway administration. We have already seen the consequences of its omission on railway finance during 1924-37. A grouping of railways, however, has to be effected as an essential preliminary step before the obligation is ascertained and imposed. When each system is assured of an adequate standard of net earnings, this obligation will not impose, as it does at present on some railways, an undue burden.

The payment of contributions to the State raises other important issues. It has been questioned on grounds of principle. The Acworth Committee, without wishing to express a positive opinion, stated their view that 'the only payment by the railways to the general exchequer should be the interest at a fixed rate on the capital advanced.'[21] But the gain to the State from its railways since 1905 had become so regular a feature as to be treated as an important source of revenue. The question of the payment to Government has cropped up again and again on occasions when railway and

[19] A committee of the Central Assembly was actually appointed in 1928, but owing to elections coming in, they became *functus officio*. The question was indefinitely postponed on account of constitutional discussions in the following years.

[20] The appointment of the Railway Convention Committee during the Budget session 1943 to examine the question of revising the terms of the convention is not referred to in the text. It arose out of the decision of Government to increase the share of surplus to the general revenues to Rs. 20 crores and still higher figures since 1942. Although these developments do not come within the scope of the present work, it may be observed that they confirm the conclusions reached in the text.

[21] *Acworth Committee Report*, para 75, p. 33.

general finances were alike adversely affected, and it was argued, as did the Hailey Committee, that it would be impracticable to replace the railway source of revenue if surrendered for railway purposes. The same view was taken by the Meston Settlement, the Layton Report, the Round Table Conference and the Niemeyer formula.

The justification for the extra payment, if needed, proceeds on the basis that it is only fair that the present surpluses of railways should be applied to reimburse the taxpayer for the losses borne by him on railway account in the past. Again it may be argued that the State, as the proprietor of the railways and as the provider of their capital may surely ask for a share in the profits earned by them. It is not necessary for us to stop to examine whether it is right to discriminate between the taxpayer as the user of rail transport and the user as the taxpayer, or whether, from the point of view of the community as a whole, the choice, barring the incidence, matters very much—the choice between some taxation of railways and some on other items, and no taxation on railways and increased taxation on other items. It is, of course, sounder policy to have cheaper transport even at the cost of increased general taxation.

The practice in certain foreign countries lends support to the claim of the Government of India. Where railways are private undertakings, corporation income taxes or local rates are levied. In 1937, the American railways paid 7·9 per cent of their total gross income to the Federal Government. In Great Britain the burden of taxation on railways has been a complaint of long standing. On the French and Italian railways there were before the World War II special taxes on the transport of passengers, luggage and goods. German railways used to pay a contribution of Rm 70 million to the State even in years of deficits.[22]

The danger of the State appropriating, as it did in the past, too large a proportion of the surplus earnings and leaving

[22] For further information, see 'Charges on operating income' by the present writer, *Railway Accounts & Finance*, Vol. IV, pp. 216-27.

too little for the essential requirements of railways was once and for all removed by the convention. The institution of the depreciation fund, the provision for a reserve fund, and other financial refinements had the effect of narrowing the margin of the distributable surplus, and when all the legitimate charges on the net income have been met, the case for payment to the State of a share of the residue is strengthened. But the suspension of the contribution for six years continuously and the balancing of the general budget during the depression period disproved the view that it was an irreplaceable source of revenue. This fact, combined with the uncertain future as it appeared in 1937, led the Wedgwood Committee to argue that 'the railways, while they should be expected to maintain full solvency, should not be regarded as a possible source from which contributions to the general revenue might be derived.'[23] The prospect of an early return to the pre-depression levels appeared remote and the outlook was too dismal for any other decision to be adopted. But the pessimism was effectively dispelled by the spectacular, albeit wartime, increases, which enabled the full discharge of the past liabilities and substantial payments to the State. The growing demands on public income, central and provincial, render the abandonment of any existing source of revenue difficult. The idea of the contribution from the railways is thus too deeply entrenched in the financial system of the country to be given up.

The rate of contribution according to the terms of the convention—one per cent of capital—was considered fair at the time it was fixed. It was only during the period of the deficits that the equity of this payment was questioned. The continued decline in the average rate of interest since 1931 has yielded some relief to railways. The total payment taking the interest charges and the contribution together compares favourably with the standard return assumed in the British Railways Act, and the 'fair return' referred to in the American

[23] *Wedgwood Committee Report*, para 213, p. 129.

Transportation Act, 1920.[24] But the precise rate of contribution should not create any difficulty and could, if excessive, be reduced. The Government of India Act, 1935, has left it to be reviewed from time to time by the Federal Government.[25] But too frequent a variation should be avoided as being undesirable both for railway and general finance.

It appears to be necessary to include the contribution also as a definite liability on each railway system as regrouped. This will offer each system the minimum standard of operating results to which it will have to conform. The task of the controlling authority in enforcing it will also be less difficult. When these systems manage their affairs satisfactorily, meeting all their expenses, interest charges and contribution, there will arise hardly any occasion for the State to disturb the arrangements designed to confer financial responsibility on the State-owned railways. The enlarged systems with their improved financial stability will be free to strive for increased efficiency and to initiate reforms which cannot be undertaken now on financial and other grounds. The railways will then have a real incentive not only to maintain the standard but also to improve upon their unique record in the past as the principal inland transport undertaking in the country.

[24] According to the decisions of the Interstate Commerce Commission, the 'fair return' has varied from 6 to 7 per cent.

[25] Government of India Act, 1935, Section 186(3). For a fuller discussion of the subject of the contribution, see 'Federal Finance and the Future of Railway Contributions' by the present writer, *Railway Accounts & Finance*, Vol. IV, pp. 65-77.

APPENDIX A

RESOLUTION ON THE SEPARATION OF RAILWAY FINANCE

The text of the resolution on the separation of railway from general finances, adopted by the Legislative Assembly on 20 September 1924, is as follows :

This Assembly recommends to the Governor-General-in-Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State on Railways

(1) The railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways.

(2) The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year *plus* one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent on the capital at charge surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.

(3) Any surplus remaining after this payment to general revenues shall be transferred to a railway reserve ; provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.

(4) The railway reserve shall be used to secure the payment of the annual contribution to general revenues ; to provide, if necessary, for arrears of depreciation and for writing down and writing off capital ; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates may be reduced.

(5) The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years.

(6) A Standing Finance Committee for Railways shall be constituted consisting of one nominated official member of the Legislative Assembly who should be chairman and eleven members elected by the Legislative Assembly from their body. The members of the Standing Finance Committee for Railways shall be *ex-officio* members of the Central Advisory Council, which shall consist, in addition, of not more than one further nominated official member, six non-official members selected from a panel of eight elected by the Council of State from their body and six non-official members selected from a panel of eight elected by the Legislative Assembly from their body.

The Railway Department shall place the estimate of railway expenditure before the Standing Finance Committee for Railways on some date

prior to the date for the discussion of the demand for grants for railways and shall, as far as possible, instead of the expenditure program revenue show the expenditure under a depreciation fund created as per the new rules for charge to capital and revenue.

(7) The railway budget shall be presented to the Legislative Assembly if possible in advance of the general budget and separate days shall be allotted for its discussion, and the Member in charge of Railways shall then make a general statement on railway accounts and working. The expenditure proposed in the railway budget, including expenditure from the depreciation fund and the railway reserve, shall be placed before the Legislative Assembly in the form of demands for grants. The form the budget shall take after separation, the detail it shall give and the number of demands for grants into which the total vote shall be divided shall be considered by the Railway Board in consultation with the proposed Standing Finance Committee for Railways with a view to the introduction of improvements in time for the next budget, if possible.

(8) These arrangements shall be subjected to periodic revision but shall be provisionally tried for at least three years.

(9) In view of the fact that the Assembly adheres to the resolution passed in February 1923, in favour of state management of Indian railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing state-managed railways remain under state management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to company management such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railways to company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this Resolution.

Apart from the above convention, this Assembly further recommends—

(*i*) that the railway services should be rapidly Indianized, and further that Indians should be appointed as Members of the Railway Board as early as possible, and

(*ii*) that the purchases of stores for the State railways should be undertaken through the organization of the Stores Purchase Department of the Government of India.

CONVENTION RESOLUTION OF 1943

That whereas it has been found that the Convention which was adopted under the Assembly Resolution, dated 20 September 1924, and which was intended to relieve the general budget from violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry on a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State has not achieved these objects, this Assembly recommends to the Governor-General-in-Council, that:

(*i*) for the year 1942-3, a sum of Rs. 2,35,32 thousand shall be paid to general revenues over and above the current and arrear contribution due under the convention,

(*ii*) from 1 April 1943, so much of the convention as provides for the contribution and allocation of surpluses to general revenues shall cease to be in force,

(*iii*) for the year 1943-4, the surplus on commercial lines shall be utilized to repay any outstanding loan from the depreciation fund and thereafter be divided 25 per cent to the railway reserve and 75 per cent to general revenues, the loss, if any, on strategic lines being recovered from general revenues, and

(*iv*) for subsequent years and until a new convention is adopted by the Assembly, the allocation of the surplus on commercial lines between the railway reserve and general revenues shall be decided each year on consideration of the needs of the railways and general revenues, the loss, if any, on strategic lines being recovered from general revenues.

APPENDIX B

LIST OF MORE IMPORTANT WORKS COSTING RS. 20 LAKHS OR MORE

(*Rs. in lakhs*)

Name of project		Estimate Rs.	Expenditure Rs.	Date	
		(i) Doubling, strengthening, etc.			
Pyu-Kyungaon, doubling	Burma	35·15	35·50	31-3-29	C
Pyuntaza-Pyu, doubling	,,	41·65	40·13	31-3-31	C
South Karanpura Railway	E.I.	48·67	49·21	31-3-29	C
Bermo-Dunea section	,,	49·40	46·26	,,	C
Grand Chord, doubling	,,	110·49	110·55	31-3-30	C
Goilkera-Manharpur	B.N.	47·63	45·85	31-3-31	C
Grant Road-Bandra	B.B.&C.I.	71·11	67·15	,,	I.P.
Bandra-Borivli	,,	79·34	74·37	,,	I.P.
Bandhua-Gaya	E.I.	33·44	30·65	,,	I.P.
Benares-Lucknow, relaying and re-sleepering	,,	23·88	3·03	,,	I.P. S
Grand Chord (M.G.)	,,	110·49	110·13	,,	C
Sholapur-Wadi, relaying	G.I.P.	22·71	14·60	,,	N.C.
Multan division, sleepers	N.W.	45·84	44·32	,,	I.P.
Cawnpore-Tundla	E.I.	92·94	33·62	31-3-36	I.P.
Itarsi-Agra, relaying	G.I.P.	165·19	136·59	,,	I.P.
Erode Branch conversion	S.I.	46·55	47·18	,,	C
		(ii) Strengthening of bridges			
Upper Sone bridge, 2nd track		45·42	38·29	31-3-31	C
Reconstruction of Nerbudda bridge		31·53	33·17	,,	N.C.
Nerbudda, rebuilding		104·20	76·75	31-3-36	C
Bassein bridge rebuilding		115·18	55·79	31-3-34	C
Roopnarain		36·72	34·42	31-3-36	C
Hardinge bridge protection		116·26	63·68	,,	C
Ring bund extension at Sara		30·16	20·84	,,	C
Lower Sone bridge, regirdering		21·82	17·51	31-3-34	C
Jumna bridge, regirdering		23·06	14·72	,,	C
		(iii) Stations, terminals, traffic facilities, marshalling yards, etc.			
Ahmedabad yard remodelling		86·29	64·79	31-3-29	C
Nagpur remodelling		85·55	85·55	,,	C
Parbatipur remodelling		25·76	25·51	31-3-31	C
Belur store yard		21·42	3·41	,,	I.P
Lucknow remodelling		56·60	48·50	,,	C
Mazgaon remodelling		39·08	38·83	,,	C
Dhond remodelling, running shed		20·73	0·70	,,	S
Poona		37·90	34·47	,,	N.C.
Bhore Ghat		43·88	38.31	,,	I.P.
Rawalpindi, remodelling traffic yard		29·07	25·91	31-3-31	I.P.
New interchange station, N.W.Ry.		53·36	51·47	,,	C.

Name of project	Estimate Rs.	Expenditure Rs.	Actuals up to	
Amritsar goods yard	34·37	34·53	31-3-31	I.P.
Bombay Central Station	140·90	147·79	31-3-34	C
Cawnpore area reconstruction	83·04	79·08	31-3-36	C
Victoria Terminus	104·02	95·30	31-3-34	C
Tondiarpet marshalling yard	50·21	49·88	31-3-36	C
Trichinopoly Fort and Junction remodelling	64·23	64·28	,,	C
Madras improvements	97·40	94·70	,,	C
Erode remodelling	52·11	52·11	,,	C
Delhi new interchange station	53·36	52·77	31-3-34	C
(iv) Workshops				
Mytinge wagon shops extension and remodelling	22·72	21·44	31-3-29	C
Dohad loco shops	140·58	..	31-3-34	C
Dohad loco scheme—D	142·58	121·88	31-3-35	C
,, ,, —E	31·99	22·87	,,	C
,, ,, —G	48·29	23·21	31-3-36	..
Kanchrapara loco shop remodelling	50·24	42·28	31-3-35	I.P.
Charbagh loco shop extension	42·08	37·95	31-3-34	I.P.
Perambur shops remodelling	280·16	257·94	31-3-35	I.P.
Central workshop and town, Trichy	331·14	327·12	,,	C
Jamalpur workshop, remodelling	31·89	14·01	31-3-36	I.P.
(v) Electrification				
Churchgate to Borivli	209·23	196·79	31-3-34	C
Main line electrification, G.I.P.	509·48	508·12	31-3-36	I.P.
Chola power house	131·52	131·60	,,	C
Suburban electrification, G.I.P.	258·99	260·04	,,	C
Madras suburban electrification	71·57	71·51	,,	C
(vi) Staff Quarters				
Model Colony, Kanchrapara	43·27	33·39	31-3-31	C
European and Indian quarters, Howrah	52·86	52·77	31-3-34	C
(vii) Miscellaneous				
Talcher colliery development	20·94	20·89	31-3-36	N.Cn.
Bhurkunda colliery	60·12	52·94	,,	I.P.
Sawang colliery development	22·03	7·72	,,	P.

C—Completed. N.C.—Not completed. S—Suspended. I.P.—In progress.
N.Cn.—Nearing completion. P—Postponed.

Note.—The actual expenditure in the case of several of the works completed during 1931-6 has been taken from the Appropriation Accounts for these years. The figures of the estimates and expenditures for the years prior to 1929-30 include appropriations from the depreciation fund. The figures for the subsequent years indicate only the additional capital expenditure.

APPENDIX C

NEW CONSTRUCTION ON INDIAN RAILWAYS

1. 1924-31

Project		Date of sanction	Date of opening	Cost Rs in lakhs
Moulmein-Ye	Burma	1922	16-4-25	92·68
Alon-Segyi	,,	11-5-22	10-6-23	14·44
Segyi-Ye-U	,,	23-11-23	1-7-26	13·84
Pegu-Kayan	,,	16-1-24	15-1-27	54·29
Sibsagar Road-Khawang	A.B.	5-2-24	10-11-27	31·96
Furkating-Badulipara-Jorhat	,,	14-4-25	1-8-28	31·61
Raipur-Parbatipur	B.N.	16-4-25	31-3-31	489·67
Dindigul-Pollachi	S.I.	28-4-25	19-11-28	87·82
Villupuram-Trichinopoly Chord	,,	19-6-25	1-2-29	205·28
Calcutta-Chord Railway	E.I.	23-7-25	31-1-31	319·97
Tumsar-Tirodi	B.N.	11-7-25	15-2-30	45·02
Hotgi-Sholapur	M.&S.M.	3-12-25	15-5-27	7·89
Gudivada-Bhimavaram	,,	17-12-25	17-9-28	40·81
Nidadavolu-Narsapur	,,	,,	3-2-29	69·73
Madura-Bodinayakanur	S.I.	28-12-25	20-11-28	55·30
Agra-Bah Railway	G.I.P.	29-12-25	10-4-29	28·73
Karimganj-Longai Valley	A.B.	14-1-26	1-1-29	32·24
Kyan-Thongwa	Burma	26-1-26	15-12-28	14·31
Dinapur-Ruhea	E.B.	29-1-26	10-4-29	32·93
Kangra Valley	N.W.	1-2-26	1-4-29	295·65
Amritsar-Narowal	,,	27-2-26	6-5-29	61·97
Shahdara-Narowal	,,	5-3-26	22-12-26	28·16
Samni-Dahej	B.B.&C.I.	31-3-26	1-3-30	9·37
Lyallpur-Jaranwala	N.W.	20-8-26	3-12-27	15·40
Jassar-Shakargarh Chak Amru	,,	19-8-26	21-12-27	16·01
Rohtak-Gohana-Panipat	,,	20-8-26	15-5-28	25·54
Dhamuah-Lakshmikantapur	E.B.	12-1-27	15-12-28	40·34
Kushab-Chak Jumra	N.W.	21-2/4-27	21-1-28	149·50
Virudhanagar-Tenkasi	S.I.	10-3-27	30-6-27	70·46
Pyinmana-Taungdwingyi	Burma	20-5-27	10-3-30	70·94
Lucknow-Sultanpur	E.I.	11-8-27	22-3-31	118·19
Unao-Madhoganj	,,	11-8-27	21-12-30	31·40
Muazampur-Narain	,,	,,	5-1-30	24·51
Boriavi-Vadtal	B.B.&C.I	16-8-27	18-4-29	2·17
Purnea-Murliganj	E.B.	16-8-27	1-10-29	30·96
Habiganj-Shaistaganj	,,	16-9-27	1-11-28	8·56
Qilla Saifulla Fort Sandeman extension	N.W.	16-8-27	15-7-29	56·50
Manamadura Railway	S.I.	18-8-27	1-7-30	114·99
Abdulpur Nawabganj	E.B.	12-10-27	11-2-30	84·39
Darwha-Pusad	G.I.P.	20-9-27	1931	32·73
Feni-Belonia	E.B.	8-12-27	1-12-29	13·52
Vasad-Katana	B.B.&C.I.	14-12-27	1-9-30	20·61
Batala-Butari	N.W.	5-1-28	20-12-28	9·11S
Kalukhali-Bhateapara	E.B.	10-1-28	1-12-31	57·02
Salem-Attur-Vridhhachalam	S.I.	14-1-28	3-2-31	88·14

Project		Date of sanction	Date of opening	Cost Rs. in lakhs
Senchoa-Mairabari	A.B.	21-2-28	24-4-30	21·47
Salem-Mecheri	S.I.	10-3-28	15-4-29	13·54
Shaistaganj-Balla	A.B.	7-6-28	1-12-29	12·05
Chittagong-Nazirhat	,,	8-6-28	17-3-30	21·98
,, -Duhazari	,,	12-12-28	10-6-31	45·25
Pollachi-Palghat	S.I.	13-6-28	1931-2	51·79
Sind Left Bank Feeders	N.W.	20-6-28	1932	89·15
Mashrak-Thawe	B.&N.W.	22-9-28/ 3-1-29	12-1-31	23·63
Tangla-Belsiri	E.B.	28-6-29	15% completed	37·26

S. Section only

2. 1930-6

Lines opened during 1930-1

	Railway	Milage	
Dhing Bazar Mairabari	A.B.	3	
Jemadipeta-Royaghada	B.N.	9	
Harishankar Road-Titilagarh	,,	35	
Rayaghada-Tharuvalli	,,	12	
Mashrak Thawe	B.&N.W.	40	
Vasad Katana	B.B.&C.I.	27	
Nyaungdo-Kyaukpadaung	Burma	11	
Unao-Madhoganj	E.I.	48	
C.I.C.Railway	,,	15	
Mahrabpur-Padidan	N.W.	44	
Pudukottai-Manamadura	S.I.	60	304

Lines opened during 1931-2

Chittagong-Dohazari	A.B.	25	
Raipur-Parvatipuram (part)	B.N.	74	
Kalukhali-Bhateapara	E.B.	53	
Darhwa-Pusad	G.I.P.	43	
Shahpur City-Khushal	N.W.	6	
Chiniot-Chinnikhichi	,,	3	
Kalabagh Bridge	,,	2	
Sakrand-Tharushah	,,	66	
Tando Adam-Nawabshah	,,	54	
Chinnasalem-Vriddhachalam	S.I.	32	
Pollachi-Palghat	,,	33	
		—	396

Lines opened during 1932-3

Lucknow-Sultanpur-Zafarabad (last section)	E.I.	57	
Tangla-Belsiri Rangapara	E.B.	53	
		—	110

Lines opened during 1933-4

Irrawadi Bridge at Sagaing with its approaches		3	
		—	3

APPENDIX D

NET EARNINGS OF NEW LINES OPENED AFTER 1 OCTOBER 1927 DURING THE FINANCIAL YEAR, 1935-6*

Name of project	Milage	Gauge	Net income 1935-6 (in 000s)	Percentage return 1935-6	estimated†
A.B.					
Chittagong-Nazarhat	22·97	M	– 23	1·02	8·50
Chittagong-Dohazari	25·05	,,	– 100	– 1·91	8·50
Feni-Bolonia	16·88	,,	– 33	– 2·34	5·80
Furkating-Baduli-Jorhat	42·28	,,	– 94	– 2·73	7·00
Karimganj-Longai Valley	39·45	,,	– 91	– 2·61	5·50
Netrokona-Mohanganj	17·55	,,	– 18	– 0·86	9·60
Shaistaganj-Habiganj Bhalla	25·29	,,	– 30	– 1·40	6·47
Senchoa-Mairabari	30·25	,,	31	1·36	13·00
Sibsagar Road-Khowang	38·79	,,	42	1·20	7·00
B. & N.W.					
Mashrak-Thawe Extension	30·32	,,	69	2·91	6·00
B.N.					
Raipur-Parvatipuram	240·00	B	4,569	8·88	5·40
B.B.&C.I.					
Boriavi-Vadtal	3·71	B	– 6	– 2·65	5·00
Jambusar-Kavi	17·87	N	19	2·44	8·00
Samni-Dahej	24·72	,,	– 16	– 1·56	8·90
Vasad-Katana	26·61	B	164	7·55	8·00
Burma					
Heho-Shweryaung	11·25	M	8	0·26	6·00
Kayan-Thongwa	10·80	,,	8	0·55	10·75
Myingyan-Paleik	68·86	,,	137	1·89	5·50
Nyaunglebin-Madauk	11·06	,,	110	8·23	3·37
Taungdwingyi-Kyaukpadaung	71·82	,,	192	1·74	6·00
E.B.					
Abdulpur-Nawabganj	57·15	B	167	1·85	6·20
Baruipur-Lakshmikantapur	23·26	,,	107	2·55	7·00
Dinajpur-Ruhea	47·80	M	312	9·16	6·50
Kalukhali-Bhateapara	53·49	B	52	0·88	5·00
Purnea-Murliganj	51·98	M	311	9·62	6·50
Tangla-Rangapara	52·50	,,	311	5·92	0·68

B.—Broad gauge. M.—Metre gauge. N.—Narrow gauge.

* *Legislative Assembly Debates*, Vol. IV, No. 1, 23 August 1937, pp. 162-7.

† Estimated percentage return of income on capital outlay some years after opening as estimated originally.

Name of project	Milage	Gauge	Net income 1935-6 (Rs. in 000s)	Percentage return 1935-6	Percentage return estimated
E.I.					
Calcutta Chord Railway	8·50	B	− 343	− 0·77	..
Chandpur-Bijnor Muazzampur	37·00	,,	68	2·01	6·10
Daltonganj-Barakana	115·00	,,	− 196	− 0·48	6·88
Lucknow-Sultanpur	136·00	,,	− 287	− 2·29	5·80
Unao-Madhoganj	48·00	,,	− 24	− 0·55	6·30
G.I.P.					
Agra-Bah	43·00	,,	− 48	− 1·55	6·30
Darwha-Pusad	42·65	N	− 19	− 0·55	6·81
M.&S.M.					
Cocoanada-Kotipalli	27·38	B	− 67	− 1·58	6·00
Guntur-Macherla	79·83	M	158	3·45	5·25
Gudivada-Bhimavaram	40·60	,,	238	5·84	6·61
Nidadavolu-Narsapur	47·16	B	325	4·73	6·61
Annivihalli-Swamihalli	11·74	M	235	74·74	..
N.W.					
Amritsar-Narowal	39·11	B	832	12·18	5·50
Batala-Beas	12·04	,,	50	5·40	5·70
Chak-Jumra-Kushab	70·47	,,	2869	16·64	6·00
Jassar Shakargarh Chak Amru	25·97	,,	125	7·58	6·00
Lyallpur-Jaranwala	20·75	B	− 3	− 0·18	5·48
Rohtak-Gohana-Panipat	44·01	,,	16	0·63	6·33
Shahdara-Narowal	48·33	,,	142	4·80	4·84
Sind Left Bank Feeders Rys.	164·49	,,	682	7·51	
Kangra-Valley	102·99	N	− 215	− 0·68	5·50
S.I.					
Cuddalur-Vridhhachalam	35·59	M	44	1·63	..
Dindigul-Pollachi	75·10	,,	125	1·53	9.44
Madura-Bodinayakanur	55·94	,,	− 45	− 0·83	8·73
Pollachi-Palghat	33·45	,,	47	0·87	5·20
Salem Mettur Dam	23·20	B	− 24	− 1.89	4.75
Salem-Attur-Vriddhachalam	82·53	M	− 27	−10·32	5·80
Shornur-Nilambur	11·35	B	− 58	− 0·72	4·00
Villupuram-Trichinipoly	109·00	M	790	3·90	6·50
Trichinopoly-Manamadura	94·22	,,	96	0·85	5·37

Appendix E

DEPRECIATION FUND COMMITTEE, 1922-3

The committee, known as the Depreciation Fund Committee, 1922-3, comprised the following members: Mr. J. R. Smellie, Deputy Locomotive Superintendent, North Western Railway, *Chairman*; and Mr. N. Pierce, Executive Engineer, Eastern Bengal Railway, and Mr. A. M. Hayman, Deputy Accountant-General, as members. The terms of reference were:

I To enquire into the question of the provision necessary on each railway to make good annual depreciation of wasting capital assets and to suggest

(*a*) the amount which is necessary to provide as normal depreciation in respect of those assets as they existed on 31 March 1922

(*b*) the principles for the calculation of annual depreciation which must be provided in respect of the various classes of assets acquired or which may be acquired after that date

(*c*) the amount which it is necessary should be provided temporarily in addition to that referred to in sub-clause (*a*) above, to make good arrears of depreciation on the assumption that this will be effected in a period of 5 or 10 years

II To suggest the methods which should be adopted for the formation and working of a 'Depreciation Fund' on each railway to be maintained from the proceeds of the amounts of depreciation arrived at in accordance with clause I above.

The principal recommendations of the committee were:

I That the provision for annual depreciation in respect of the wasting capital assets as they stood on 31 March 1922 should be Rs. 12,25,67,231.

II(*a*) That the annual normal depreciation of the wasting capital assets of the railways as they stood on 31 March 1922, be calculated on the factors, (1) the estimated economic or functional life of each class of assets, and (2) of replacement prices; and on the assumption that an equal part of the economic life of an asset expires each year.

(*b*) That the annual normal depreciation on capital outlay invested in the acquisition of assets after 31 March 1922, be calculated according to the following basis:

A. In the case of capital outlay on new lines

Commencing from date of opening to traffic

1st-5th	year	0.5	per cent of	total capital outlay on wasting capital asset at the end of each year
6th-10th	,,	1	per cent	ditto
11th-25th	,,	1·5	per cent	ditto
25th-40th	,,	2	per cent	ditto
Thereafter		2	per cent	such capital outlay at the end of the 40th year with one per cent on all further capital outlay on the wasting capital assets.

B. In the case of capital oulay on existing lines

A rate of one per cent *per annum* on all additional capital outlay. This rate will be found suitable and equitable for many years to come.

III That the amount of arrear renewals and replacements on 31 March 1922, is Rs. 19,95,08,100, which would require annual expenditure of Rs. 3,99,01,620, and Rs. 1,99,50,810, respectively, if the arrears are to be overtaken in 5 or 10 years.

IV That the depreciation fund for each railway take the form of a suspense account in the deposit section of the accounts, the amount at credit of the account bearing interest and being available to be drawn upon at any time by the railway administration in the same way as if it had been separately invested by the railway.

That the money required to overtake arrear renewals and replacements be provided from borrowings repayable from revenue on an annuity basis.

V That definite rules be laid down prescribing exactly what classes of expenditure are on renewals and replacements (depreciation) account.

VI That certain minor alterations be made in the classification of capital and revenue expenditure.

VII That all future capital outlay on plant—construction—be apportioned as a part of the cost of the wasting capital assets for which the plant is obtained.

VIII That all expenditure on loose hand tools, except that incurred on first equipment should be charged to ordinary working expenses.

The minor alterations referred to in VI above were explained by the committee as follows. They recommended that in the classification of capital outlay, the excess of expenditure on steel work on bridges and sleepers should be separately recorded; that the classification of the revenue accounts of railways should be so revised as to exhibit separately and distinctly expenditure incurred in making good depreciation of wasting capital assets; and that expenditure classified as renewal and replacements chargeable to the depreciation fund and classified as ordinary maintenance and repairs chargeable against the grant for ordinary working expenses should be clearly and precisely defined. (Paras 37 and 66).

APPENDIX F

STATISTICAL STATEMENTS

I. FINANCIAL RESULTS OF WORKING THE STATE-OWNED RAILWAYS*

(EXCLUDING WORKED LINES)

(1) Gross traffic receipts

(In lakhs of rupees)

Railways		1924-5	1925-6	1926-7	1927-8	1928-9	1929-30	1924-30 Average
State-managed								
Burma	..	429	493	461	503	495	487	478
E.B.	..	592	629	672	700	703	673	662
E.I.†	..	2061	1972	1966	2043	2031	1985	2010
G.I.P.	..	1516	1463	1470	1509	1530	1458	1491
N.W.Com.	..	1513	1370	1404	1489	1423	1439	1440
,, Str.	..	160	164	153	160	167	159	160
Company-managed								
A.B.	..	144	164	176	205	207	205	183
B.N.	..	838	820	916	912	931	876	817
B.B.&C.I.	..	1233	1214	1126	1134	1186	1152	1174
Jodhpur	..	29	26	21	25	21	25	24
Luck-Bar.‡	..	36	37	36	40	36	36	37
M.&S.M.	.	791	814	812	864	920	898	850
S.I.	.	515	544	549	580	563	633	564
Tirhoot	.	147	156	170	167	170	171	164
Others	..	9	10	6	8	9	15	9
TOTAL	..	10013	9894	9842	10342	10373	10270	10122

Railways	1930-1	1931-2	1932-3	1933-4	1934-5	1930-5 Average	1935-6	1936-7
State-managed								
Burma	428	374	333	357	372	373	361	370
E.B.	586	505	491	507	543	526	525	574
E.I.	1824	1736	1727	1763	1871	1784	1863	1944
G.I.P.	1333	1192	1195	1221	1217	1232	1241	1327
N.W.Com.	1498	1334	1273	1323	1387	1363	1416	1562
,, Str.	148	132	123	123	123	130	126	138
Company-managed								
A.B.	196	184	156	160	180	175	160	168
B.N.	817	724	691	739	795	753	864	839
B.B.&C.I.	1090	1030	1017	1061	1107	1061	1108	1189
Jodhpur	23	18	23	25	28	23	38	37
Luck-Bar.‡	36	35	36	36	37	36	38	40
M.&S.M.	798	715	666	684	672	707	654	668
S.I.	580	530	551	514	524	540	499	512
Tirhoot	140	141	148	138	152	144	160	169
Others	13	13	13	12	12	13	12	12
TOTAL	9510	8663	8443	8663	9020	8860	9065	9549

* Source : Railway Budget papers.
† Includes the figures of the O. & R. Railway for 1924-5.
‡ Lucknow-Bareilly.

(2). Ordinary working expenses

(In lakhs of rupees)

Railways	1924-5	1925-6	1926-7	1927-8	1928-9	1929-30	1924-30 Average
State-managed							
Burma	218	232	240	249	276	257	245
E.B. ..	347	383	363	373	386	384	373
E.I.* ..	1054	1011	991	985	1002	1021	1011
G.I.P. ..	805	905	881	819	837	837	847
N.W.Com. ..	746	700	774	798	794	847	777
,, Str. ..	156	145	152	158	160	168	156
Company-managed							
A.B. ..	82	83	89	97	102	113	64
B.N. ..	473	481	444	504	511	551	494
B.B.&C.I. ..	591	624	605	584	608	607	603
Jodhpur ..	17	17	16	15	17	17	17
Luck.-Bar.† ..	12	13	16	15	14	15	14
M.&S.M. ..	363	387	395	394	399	395	389
S.I. ..	260	269	255	260	263	279	264
Tirhoot ..	36	44	57	59	51	52	50
Others ..	5	5	11	—4	2	16	6
TOTAL ..	5165	5299	5289	5306	5422	5559	5340

Railways	1930-1	1931-2	1932-3	1933-4	1934-5 Average	1930-5	1935-6	1936-7
State-managed								
Burma	230	233	220	227	230	228	226	207
E.B.	374	329	324	336	345	342	365	371
E.I.	995	902	917	922	931	933	937	93
G.I.P.	857	713	721	713	688	738	690	66
N.W.Com.	903	774	737	772	781	793	772	77
,, Str.	176	138	146	142	147	150	152	14
Company-managed								
A.B.	111	109	103	108	117	110	113	11
B.N.	502	483	489	494	513	496	552	53
B.B.&C.I.	496	550	548	528	549	534	539	56
Jodhpur	15	15	15	18	18	16	19	2
Luck.-Bar.†	23	16	16	16	15	17	16	1
M.&S.M.	375	340	330	339	347	346	352	33
S.I.	273	263	277	271	273	272	278	27
Tirhoot	98	56	61	57	66	68	69	7
Others	11	10	4	7	7	8	7	
TOTAL	5439	4931	4908	4950	5027	5051	5087	502

* Includes the figures of the O. & R. Railway for 1924-5.
† Lucknow-Bareilly.

(3) Total working expenses

(In lakhs of rupees)

Railways		1924-5	1925-6	1926-7	1927-8	1928-9	1929-30	1924-30 Average
State-managed								
Burma		260	275	283	294	322	305	290
E.B.		419	459	440	452	469	471	452
E.I.*		1255	1203	1190	1192	1217	1242	1217
G.I.P.		940	1051	1033	977	1004	1020	1004
N.W.Com.		918	888	949	990	1001	1064	968
,, Str.		196	180	187	195	199	209	194
Company-managed								
A.B.	..	106	107	113	121	127	140	119
B.N.	..	576	591	558	621	629	675	608
B.B.&C.I.	..	698	734	721	708	738	740	723
Jodhpur	..	18	18	17	17	19	19	18
Luck.-Bar.†	..	17	18	21	19	19	20	19
M.&S.M.	..	434	461	477	475	486	485	470
S.I.	..	307	316	305	313	323	344	318
Tirhoot	..	51	60	71	74	66	68	65
Others	..	5	5	13	—4	3	16	6
TOTAL	..	6200	6366	6378	6444	6622	6818	6471

Railways	1930-1	1931-2	1932-3	1933-4	1934-5	1930-5 Average	1935-6	1936-7
State-managed								
Burma	282	286	274	282	284	282	284	265
E.B.	466	425	422	433	442	438	450	457
E.I.	1224	1137	1152	1161	1171	1169	1177	1178
G.I.P.	1046	907	919	907	890	934	892	858
N.W.Com.	1129	1007	985	1001	1016	1028	960	961
,, Str.	219	181	190	185	190	193	209	200
Company-managed								
A.B.	140	140	135	139	149	141	153	150
B.N.	633	617	628	632	652	632	681	667
B.B.&C.I.	630	689	687	667	687	672	666	683
Jodhpur	18	17	16	21	21	18	21	22
Luck.-Bar.†	28	20	20	20	19	21	20	19
M.&S.M.	463	430	420	429	438	436	444	426
S.I.	342	338	355	348	351	347	353	347
Tirhoot	114	72	77	73	81	83	86	89
Others	12	11	5	8	8	9	16	16
TOTAL	6746	6277	6285	6306	6399	6403	6412	6338

* Includes the figures of the O. & R. Railway for 1924-5.
† Lucknow-Bareilly.

(4) Net receipts

(In lakhs of rupees)

Railways		1924-5	1925-6	1926-7	1927-8	1928-9	1929-30	1924-30 Average
State-managed								
Burma	..	169	218	178	209	173	182	188
E.B.	..	173	170	232	248	234	202	210
E.I.*	..	806	769	776	851	814	743	793
G.I.P.	..	576	412	437	532	526	438	487
N.W.Com.	..	595	482	455	499	422	375	472
,, Str.	..	−36	−16	−34	−35	−32	−50	−34
Company-managed								
A.B.	..	38	57	63	84	80	65	64
B.N.	..	262	247	262	295	283	256	268
B.B.&C.I.	..	535	480	405	426	448	412	451
Jodhpur	..	11	8	4	8	2	6	6
Luck.-Bar.†	..	19	19	15	21	17	16	18
M.&S.M.	..	357	353	335	389	434	413	380
S.I.	..	208	228	244	267	240	289	246
Tirhoot	..	96	96	99	93	104	106	99
Others	..	4	5	−7	12	6	−1	3
TOTAL	..	3813	3528	3464	3899	3751	3452	3651

Railways	1930-1	1931-2	1932-3	1933-4	1934-5	1930-35 Average	1935-6	1936-7
State-managed								
Burma	146	88	59	75	88	91	77	105
E.B.	120	80	69	74	101	88	75	117
E.I.	600	599	575	602	700	615	686	766
G.I.P.	287	285	276	314	327	298	349	469
N.W.Com.	369	327	288	322	371	335	456	601
,, Str.	−71	−49	−67	−62	−67	−63	−83	−62
Company-managed								
A.B.	56	44	21	21	31	34	7	18
B.N.	184	107	63	107	143	121	183	172
B.B.&C.I.	460	341	330	394	420	389	442	506
Jodhpur	5	1	7	4	7	5	17	15
Luck.-Bar.†	8	15	16	16	18	15	18	21
M.&S.M.	335	285	246	255	234	271	210	242
S.I.	238	192	196	166	173	193	146	165
Tirhoot	26	69	71	65	71	61	74	80
Others	1	2	8	4	4	4	−4	−4
TOTAL	2764	2386	2158	2357	2621	2457	2653	3211

* Includes the figures of the O. & R. Railway for 1924-5.

† Lucknow-Bareilly.

(5) Profit or loss

(In lakhs of rupees)

Railways		1924-5	1925-6	1926-7	1927-8	1928-9	1929-30	1924-30
State-managed								
Burma	..	42	81	24	61	4	4	36
E.B.	..	16	10	70	80	54	16	41
E.I.*	..	289	280	267	319	244	161	260
G.I.P.	..	242	47	71	141	108	8	103
N.W.Com.	..	287	176	121	123	9	−64	109
„ Str.	..	−159	−147	−165	−168	−174	−190	−167
Company-managed								
A.B.	..	−31	−13	−11	4	−6	−23	−14
B.N.	..	−12	−47	−40	−20	−47	−83	−42
B.B.&C.I.	..	292	220	142	158	164	111	181
Jodhpur	..	9	6	2	4	−1	2	4
Luck.-Bar.†	..	9	9	4	10	6	5	7
M.&S.M.	..	111	85	63	104	138	89	98
S.I.	..	97	113	120	125	81	113	108
Tirhoot	..	63	60	68	56	66	65	63
Others & Misc.	..	61	48	14	88	135	190	90
TOTAL	..	1316	928	750	1085	781	404	877

Railways	1930-1	1931-2	1932-3	1933-4	1934-5	1930-5 Average	1935-6	1936-7
State-managed								
Burma	−44	−73	−75	−71	−56	−64	−68	−36
E.B.	−79	−123	−128	−125	−93	−110	−118	−79
E.I.	−18	−24	−13	37	114	19	104	175
G.I.P.	−172	−178	−168	−124	−104	−149	−67	46
N.W.Com.	−117	−158	−178	−136	−70	−132	24	153
„ Str.	−217	−199	−209	−203	−203	−206	−210	−196
Company-managed								
A.B.	−39	−52	−74	−73	−60	−60	−84	−75
B.N.	−199	−248	−280	−227	−186	−228	−138	−152
B.B.&C.I.	43	45	41	100	128	72	156	216
Jodhpur	−1	−3	3	1	3	1	13	10
Luck.-Bar.†	6	4	5	5	8	6	8	10
M.&S.M.	1	14	−19	−4	−26	−7	−38	−3
S.I.	31	1	6	−21	−10	1	−32	−10
Tirhoot	24	34	30	25	32	29	35	41
Others & Misc.	262	44	32	20	17	75	16	21
TOTAL	−519	−920	−1023	−796	−506	−753	−399	121

* Includes the figures of the O. & R. Railway for 1924-5.

† Lucknow-Bareilly.

II. PASSENGER TRAFFIC AND EARNINGS*

(All railways : 1900 to 1936-7)

Year	Number of passengers (millions)					Earnings (in crores of Rs.)				
	First	Second	Inter	Third	S&V†	First	Second	Inter	Third	S&V†
1900	0·521	2·285	5·703	153·954	13·85	0·32	0·47	0·56	7·52	0·08
1905	0·663	2·949	8·104	218·413	18·03	0·45	0·65	0·83	10·69	0·12
1910	0·778	2·962	11·033	332·462	24·34	0·59	0·77	0·95	14·65	0·16
1911	0·799	3·135	11·762	348·479	25·69	0·66	0·84	1·09	15·73	0·17
1912	0·796	3·223	10·833	375·567	26·81	0·63	0·88	0·91	17·01	0·18
1913	0·230	0·844	2·883	98·221	7·44	0·20	0·21	0·24	4·52	0·05
1913-4	0·813	3·461	12·371	410·960	30·14	0·69	0·89	1·03	18·37	0·19
1914-5	0·725	3·463	12·618	403·559	30·72	0·60	0·90	1·03	17·63	0·19
1915-6	0·729	3·791	13·648	413·254	32·96	0·59	1·01	1·13	18·05	0·21
1916-7	0·823	4·607	14·349	431·456	34·80	0·72	1·30	1·22	19·62	0·22
1917-8	0·883	4·216	7·719	381·017	36·43	0·95	1·43	1·16	21·45	0·24
1918-9	1·049	5·119	8·722	404·388	40·46	1·12	1·73	1·43	24·43	0·28
1919-20	1·108	6·439	10·201	460·306	41·97	1·29	2·18	1·70	27·90	0·31
1920-1	1·149	7·129	11·750	490·280	48·94	1·30	2·26	1·91	28·91	0·37
1921-2	1·085	6·492	10·654	490·734	52·37	1·38	2·30	1·78	28·42	0·42
1922-3	0·918	5·134	8·129	502·776	55·67	1·40	2·12	1·38	32·21	0·49
1923-4	1·199	10·128	11·374	544·622	..	1·31	2·03	1·41	33·33	..
1924-5	1·109	9·778	12·201	553·266	..	1·23	1·92	1·48	34·13	..
1925-6	1·033	9·901	13·602	574·608	..	1·20	1·89	1·60	34·76	..
1926-7	1·012	10·006	14·945	578·409	..	1·18	1·88	1·62	33·44	..
1927-8	0·980	9·963	17·351	594·821	..	1·14	1·96	1·69	34·39	..
1928-9	0·913	9·585	17·870	591·743	..	1·12	1·92	1·66	33·54	..
1929-30	0·804	9·125	17·900	606·468	..	1·04	1·84	1·59	34·11	..
1930-1	0·671	8·089	16·189	550·879	..	0·94	1·70	1·41	30·24	..
1931-2	0·508	5·938	12·354	487·037	..	0·83	1·54	1·23	27·75	..
1932-3	0·429	5·278	10·871	485·317	..	0·78	1·47	1·15	27·92	..
1933-4	0·421	5·050	10·557	473·585	..	0·76	1·42	1·12	26·79	..
1934-5	0·406	4·818	10·316	481·051	..	0·77	1·41	1·12	27·05	..
1935-6	0·384	4·763	10·469	488·075	..	0·78	1·46	1·11	27·21	..
1936-7	0·408	4·590	11·085	493·835	..	0·81	1·47	1·15	26·90	..

* Source : *Administration* and *Railway Board's Reports.*

† Season ticket holders and vendors tickets. The number of season ticket holders and vendors tickets and their earnings have been included in their respective classes from 1923-4 onwards.

Note.—In pre-war reports of the Railway Board, the number of passengers carried on each separate railway was shown as the total number of passengers carried on railways. Passengers carried over two or more railways on a single journey were thus counted as two or three passengers. From 1923-4 onwards the number of passengers taken is the number of passengers originating. The adjusted figures for 1911 on the same basis are, in millions : first class : 0·703 ; second class : 2·947 ; inter : 11·409 ; and third class : 331·055 ; S.&V. : 25·69.

III. PASSENGER TRAFFIC AND EARNINGS, CLASS I RAILWAYS

(1) First class

Railways	Earnings 1924-5 Actuals Rs.	Earnings % relation to 1924-5 1929-30	1933-4	1936-7	Number of passengers 1924-5 Actuals	Number of passengers % relation to 1924-5 1929-30	1933-4	1936-7
Broad gauge :	Lakhs				Thousands			
B.N.	8·30	92	59	66	37	105	65	65
B.B.&C.I.	9·09	97	82	92	363	47	13	13
M.&S.M.	5·66	95	76	84	21	114	81	86
S.I.	2·06	87	55	74	12	125	67	83
E.B.	5·02	104	63	66	121	73	38	38
E.I.*	21·66	67	56	58	133	76	49	51
G.I.P.	25·91	90	63	68	140	91	54	48
N.W.	14·20	92	74	75	87	122	63	57
N.S.	0·64	139	142	144	10	90	60	60
TOTAL	92·54	87	66	70	923	73	37	36
Metre gauge :								
A.B.	2·15	105	61	77	16	113	69	150
B.&N.W.	1·13	85	88	83	17	88	82	88
B.B.&C.I.	4·04	73	52	46	31	71	52	42
M.&S.M.	2·20	82	55	50	14	93	57	50
R.&K.	0·80	84	60	54	7	86	57	57
S.I.	4·80	101	52	72	48	81	56	52
Burma	5·64	81	51	51	91	64	30	22
E.B.	2·28	62	42	47	20	80	55	80
Jodhpur	0·67	94	63	85	4	100	75	100
N.S.	0·54	89	63	69	7	71	43	43
TOTAL	24·25	85	54	59	255	77	49	51
ALL RAILWAYS	119·57	86	63	67	1,195	74	40	40

Railways	Passenger miles 1924-5 Actuals	Passenger miles % relation to 1924-5 1929-30	1933-4	1936-7	Average lead 1924-5 Actuals	Average lead % relation to 1924-5 1929-30	1933-4	1936-7
Broad gauge :	Millions				Miles			
B.N.	7·61	104	69	78	205	99	106	120
B.B.&C.I.	10·78	101	77	84	30	217	570	620
M.&S.M.	4·43	124	87	97	207	110	107	116
S.I.	1·48	106	64	109	127	83	99	109
E.B.	4·66	129	77	84	38	179	202	223
E.I.*	19·15	108	74	80	160	143	152	155
G.I.P.	21·78	124	76	80	156	136	140	168
N.W.	14·41	140	87	86	167	114	137	150
N.S.	0·78	139	112	118	82	155	168	173
TOTAL	85·07	119	78	83	92	162	208	229
Metre gauge :								
A.B.	1·51	104	59	114	93	93	87	78
B.&N.W.	1·23	105	118	118	75	117	140	129
B.B.&C.I.	3·40	90	64	52	109	125	125	122
M.&S.M.	1·67	111	66	61	117	126	122	125
R.&K.	0·60	93	72	66	82	122	121	122
S.I.	2·95	130	74	105	61	164	135	143
Burma	4·71	113	61	57	52	175	204	262
E.B.	1·86	87	59	68	94	104	106	83
Jodhpur	0·49	111	73	99	117	107	95	103
N.S.	0·63	96	66	73	91	141	140	142
TOTAL	19·05	106	68	75	75	138	140	146
ALL RAILWAYS	105·24	116	76	81	88	157	190	206

* Includes the figures of the O.&R. for 1924-5.

(2) Second class

Railways	Earnings 1924-5 Actuals Rs.	% relation to 1924-5 1929-30	1933-4	1936-7	No. of passengers 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7
Broad gauge :	Lakhs				Thousands			
B.N.	8·07	103	88	95	202	91	54	53
B.B.&C.I.	20·99	86	76	83	4,569	75	41	34
M.&S.M.	8·24	113	86	90	163	117	70	93
S.I.	3·92	106	93	107	105	121	86	95
E.B.	5·75	140	101	105	436	105	48	56
E.I.*	29·39	84	68	71	695	86	60	58
G.I.P.	32·77	93	70	73	1,538	118	59	51
N.W.	26·52	98	76	75	490	152	71	65
N.S.	1·72	140	128	127	68	96	66	53
TOTAL	137·37	96	76	80	8,266	92	50	45
Metre gauge :								
A.B.	1·65	136	98	64	38	142	97	82
B.&N.W.	2·96	101	86	95	94	111	89	100
B.B.&C.I.	8·53	81	69	70	173	89	72	70
M.&S.M.	5·92	88	64	57	151	95	64	60
R.&K.	1·22	91	78	83	30	87	80	80
S.I.	9·57	120	83	77	418	102	88	72
Burma	8·66	105	57	57	581	105	42	45
E.B.	2·54	71	57	66	71	101	66	85
Jodhpur	1·90	97	78	101	23	130	113	143
N.S.	1·66	96	70	67	76	71	50	41
TOTAL	44·41	99	71	70	1,656	101	66	63
ALL RAILWAYS	184·79	96	74	77	9,987	94	53	48

Railways	Passenger miles 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7	Average lead 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7
Broad gauge :	Millions				Miles			
B.N.	15·5	108	99	107	77	119	182	200
B.B.&C.I.	57·1	96	68	70	13	123	162	200
M.&S.M.	14·3	135	98	128	88	115	140	136
S.I.	5·8	133	110	170	56	109	127	130
E.B.	10·7	148	105	112	25	142	212	196
E.I.*	56·9	126	91	94	82	146	150	161
G.I.P.	65·8	121	73	75	43	102	123	147
N.W.	51·0	155	92	92	104	102	129	141
N.S.	4·2	138	109	109	62	142	158	195
TOTAL	281·3	125	84	89	34	135	168	200
Metre gauge :								
A.B.	2·5	128	89	63	67	88	93	78
B.&N.W.	6·3	104	105	116	66	95	118	117
B.B.&C.I.	13·6	105	84	81	79	118	116	116
M.&S.M.	9·8	104	72	125	65	111	114	211
R.&K.	2·0	103	91	101	68	118	115	126
S.I.	15·1	147	104	136	36	144	119	122
Burma	15·7	143	71	65	27	137	170	144
E.B.	4·2	83	67	79	59	83	102	95
Jodhpur	2·7	117	97	126	115	91	88	88
N.S.	3·9	101	73	78	51	141	145	178
TOTAL	75·9	121	85	98	46	120	128	157
ALL RAILWAYS	360·0	124	84	91	36	133	161	192

* Includes the figures of the O.&R. for 1924-5.

(3) Inter class

Railways	Earnings 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7	No. of passengers 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7
	Rs. Lakhs				Thousands			
Broad gauge :								
B.N.	11·26	142	107	107	991	206	155	153
B.B.&C.I.	58	490	621	767	9	522	689	778
M.&S.M.	4·39	168	122	120	237	181	92	134
S.I.	..	..	..	..	..	..	..	..
E.B.	9·93	148	87	80	2,438	162	66	86
E.I.*	43·94	107	77	78	4,095	140	90	88
G.I.P.	7·71	112	90	101	104	230	114	137
N.W.	52·40	73	49	47	3,363	96	60	55
N.S.	..	..	..	..	..	..	..	..
TOTAL	130·27	104	74	74	11,237	139	82	85
Metre gauge :								
A.B.	2·44	245	135	144	184	353	165	187
B.&N.W.	2·69	165	129	168	229	188	141	183
B.B.&C.I.	14	93	121	200	10	110	120	180
M.&S.M.	1·20	143	105	161	58	152	67	157
R.&K.	48	104	110	135	48	100	110	142
S.I.	91	105	34	43	15	87	33	40
Burma	..	..	..	..	..	..	..	..
E.B.	3·50	127	73	69	274	277	164	157
Jodhpur	1·62	72	67	104	92	107	104	200
N.S.	..	..	..	..	..	..	..	..
TOTAL	12·98	149	98	118	909	231	140	171
ALL RAILWAYS	145·29	107	75	78	12,258	146	87	92

Railways	Passenger miles 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7	Average lead 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7
	Millions				Miles			
Broad gauge :								
B.N.	43·54	166	138	136	44	80	89	89
B.B.&C.I.	1·52	687	830	1230	169	131	121	159
M.&S.M.	16·89	169	104	110	71	93	114	82
S.I.	..	..	..	..	..	..	..	..
E.B.	42·34	171	97	107	17	106	153	129
E.I.*	179·17	144	139	101	44	102	111	114
G.I.P.	21·06	139	100	119	202	60	88	87
N.W.	207·15	90	52	51	62	94	85	94
N.S.	..	..	..	..	..	..	..	..
TOTAL	511·66	128	86	89	46	92	104	104
Metre gauge :								
A.B.	10·32	247	127	141	56	70	79	75
B.&N.W.	11·61	206	164	214	51	110	116	116
B.B.&C.I.	0·51	102	143	221	50	94	120	128
M.&S.M.	4·60	143	88	147	80	94	129	94
R.&K.	2·05	95	108	143	43	93	98	102
S.I.	2·32	104	34	42	157	122	108	109
Burma	..	..	..	..	..	..	..	..
E.B.	13·02	167	93	108	47	62	57	70
Jodhpur	5·43	82	78	120	59	78	73	61
N.S.	..	...	..	..	..	..	..	..
TOTAL	49·86	175	100	144	55	76	80	84
ALL RAILWAYS	566·03	132	89	93	46	91	102	102

* Includes the figures of the O.&R. for 1924-5.

(4) Third class

Railways	Earnings 1924-5 Actuals Rs.	% relation to 1924-5 1929-30	1933-4	1936-7	Number of passengers 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7
Broad gauge :	Crores				Millions			
B.N.	1·73	99	68	67	19·08	112	77	77
B.B.&C.I.	2·02	93	87	88	58·61	100	94	100
M.&S.M.	1·28	120	95	86	22·35	128	84	76
S.I.	0·47	123	115	111	8·65	149	147	148
E.B.	1·11	115	86	91	28·60	118	86	98
E.I.*	5·48	93	76	77	7·84	93	76	76
G.I.P.	3·86	66	74	72	54·60	111	90	95
N.W.	5·24	98	77	80	72·86	110	79	87
N.S.	0·23	130	122	122	4·69	111	75	66
TOTAL	21·42	98	79	79	340·27	108	85	89
Metre gauge :								
A.B.	0·61	130	82	92	9·63	143	103	120
B.&N.W.	1·53	113	77	86	32·40	121	86	95
B.B.&C.I.	2·18	90	75	72	33·03	92	68	67
M.&S.M.	1·10	96	74	68	18·25	107	73	74
R.&K.	0·24	92	92	92	6·36	95	102	103
S.I.	1·87	117	94	77	38·20	136	120	107
Burma	1·40	91	56	63	35·03	93	57	57
E.B.	0·88	111	63	73	12·59	121	71	92
Jodhpur	0·35	91	86	109	3·04	118	106	150
N.S.	0·30	110	83	87	6·27	106	74	71
TOTAL	10·46	104	76	76	194·81	112	84	85
ALL RAILWAYS	32·47	100	78	78	545·58	109	84	87

Railways	Passenger miles 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7	Average lead 1924-5 Actuals	% relation to 1924-5 1929-30	1933-4	1936-7
Broad gauge :	Millions				Miles			
B.N.	933	105	74	74	49	94	96	96
B.B.&C.I.	1,245	97	87	89	21	100	95	90
M.&S.M.	708	126	88	90	32	97	103	116
S.I.	223	148	131	151	26	100	88	88
E.B.	641	121	88	101	22	105	105	105
E.I.*	2,286	125	97	99	43	135	128	130
G.I.P.	1,953	107	80	90	36	94	89	94
N.W.	2,902	125	89	96	40	113	113	110
N.S.	142	130	111	122	30	117	150	167
TOTAL	11,794	118	89	94	38	100	95	97
Metre gauge :								
A.B.	318	124	81	105	33	88	79	88
B.&N.W.	1,181	121	84	91	38	97	92	92
B.B.&C.I.	1,299	91	73	70	39	100	108	105
M.&S.M.	602	102	70	81	33	97	94	109
R.&K.	169	92	97	99	27	96	93	93
S.I.	923	139	108	104	24	104	92	88
Burma	687	106	64	69	20	115	110	120
E.B.	481	124	68	85	38	103	95	92
Jodhpur	163	93	94	118	54	78	89	78
N.S.	194	110	83	93	31	103	113	116
TOTAL	6,017	112	81	86	31	100	97	100
ALL RAILWAYS	18,071	116	86	91	33	106	103	106

* Includes the figures of the O.&R. for 1924-5.

(5) Average fare per mile per passenger on broad and metre gauge railways

Railways	First class 1924-5	1929-30	1933-4	1936-7	Second class 1924-5	1929-30	1933-4	1936-7
Broad gauge :	Pies	Pies	Pies	Pies	Pies	Pies	Pies	Pies
B.N.	21·0	18·5	18·0	17·7	9·97	9·42	8·91	8·90
B.B.&C.I.	16·2	15·6	17·4	17·6	7·06	6·32	7·82	8·41
M.&S.M.	24·5	18·7	21·5	21·2	11·00	9·30	9·71	7·81
S.I.	26·8	21·8	20·2	20·9	12·90	10·30	9·97	10·10
E.B.	20·6	16·6	16·8	16·4	10·30	9·73	9·90	9·69
E.I.*	21·7	13·4	16·4	15·8	9·92	6·59	7·41	7·49
G.I.P.	22·8	16·6	18·9	19·3	9·57	7·32	9·14	9·36
N.W.	18·9	12·4	16·1	16·4	9·90	6·32	8·20	8·19
N.S.	15·7	15·6	19·9	19·6	7·95	8·04	9·60	9·59
TOTAL	20·8	15·3	17·7	17·6	9·38	7·19	8·47	8·41
Metre gauge :								
A.B.	27·4	27·5	28·5	18·5	12·50	13·20	13·60	12·50
B.&N.W.	17·6	13·7	12·4	11·8	8·45	8·01	6·74	6·67
B.B.&C.I.	22·8	18·7	18·6	19·9	12·00	9·23	9·87	10·30
M.&S.M.	25·2	18·6	21·0	20·9	11·60	9·72	10·30	5·22
R.&K.	25·5	23·1	21·4	21·0	11·60	10·20	9·96	9·50
S.I.	31·2	22·2	20·4	23·0	12·20	9·19	8·91	10·10
Burma	23·0	16·5	19·2	20·7	10·60	7·74	8·56	9·31
E.B.	23·6	16·7	16·7	16·1	11·60	9·72	9·78	9·57
Jodhpur	26·3	22·4	22·7	22·5	13·70	11·40	11·10	11·00
N.S.	16·6	15·6	16·0	16·2	8·18	7·75	7·78	7·42
TOTAL	24·4	19·5	19·5	19·2	11·20	9·23	9·46	7·96
ALL RAILWAYS	21·8	16·1	18·0	17·9	9·93	7·64	8·71	8·32

Railways	Inter class 1924-5	1929-30	1933-4	1936-7	Third class 1924-5	1929-30	1933-4	1936-7
Broad gauge :	Pies	Pies	Pies	Pies	Pies	Pies	Pies	Pies
B.N.	4·97	4·24	3·85	3·92	3·55	3·35	3·28	3·24
B.B.&C.I.	7·34	5·24	5·46	4·56	3·31	2·96	3·14	3·07
M.&S.M.	4·99	4·96	5·83	5·47	3·48	3·31	3·74	3·31
S.I.	..	..	..	..	4·08	3·37	3·42	3·28
E.B.	4·50	3·91	4·05	3·37	3·35	3·17	3·21	3·01
E.I.*	4·71	3·49	3·58	3·63	3·45	2·58	2·70	2·67
G.I.P.	7·09	5·73	6·35	6·01	3·80	3·28	3·54	3·05
N.W.	4·86	3·96	4·53	4·51	3·46	2·73	3·01	2·89
N.S.	..	..	6·08	6·21	3·11	3·09	3·36	3·39
TOTAL	5·00	3·95	4·17	4·10	3·51	2·92	3·11	2·93
Metre gauge :								
A.B.	4·54	4·48	4·80	4·59	3·70	3·82	3·73	3·23
B.&N.W.	4·46	3·47	3·39	3·35	2·49	2·29	2·23	2·27
B.B.&C.I.	5·30	4·67	4·49	4·80	3·22	3·22	3·33	3·32
M.&S.M.	5·00	4·98	5·97	5·48	3·49	3·31	3·73	2·99
R.&K.	4·48	4·90	4·51	4·26	2·74	2·72	2·51	2·48
S.I.	7·53	7·66	7·54	7·70	3·88	3·22	3·36	3·19
Burma	..	..	..	..	3·92	3·33	3·41	3·57
E.B.	5·16	3·90	4·01	3·27	3·49	3·11	3·19	2·96
Jodhpur	5·75	5·04	4·95	4·98	4·10	4·06	3·75	3·77
N.S.	..	..	..	..	2·98	2·94	2·98	2·94
TOTAL	5·00	4·27	4·32	4·11	3·34	3·09	3·17	2·97
ALL RAILWAYS	4·92	4·00	4·20	4·11	3·45	2·99	3·13	2·95

* Includes the figures of the O.&R. for 1924-5.

IV. STAFF STATISTICS

(1) Number of non-gazetted employees, 1929-37

Railways :	1929-30	1932-3	1930-1	1931-2	1933-4	1934-5	1935-6	1936-7
Burma	28,381	27,132	25,300	24,616	24,491	23,475	23,651	23,142
E.B.	57,628	539,394	50,046	46,896	48,597	51,246	49,509	52,286
E.I.	153,309	144,609	130,198	124,073	121,377	122,883	124,859	124,710
G.I.P.	112,766	96,173	89,205	86,270	83,436	80,983	83,328	81,842
N.W.	125,135	120,172	108,943	107,952	102,276	103,611	104,948	100,395
A.B.	17,348	17,018	16,137	15,524	16,342	16,250	16,603	17,027
B.N.	73,192	72,206	71,125	64,288	64,681	64,103	65,373	66,253
B.&N.W.	27,938	27,757	26,604	26,385	26,725	27,345	27,260	27,150
B.B.&C.I.	75,754	72,361	67,242	66,807	64,051	64,029	64,743	63,473
M.&S.M.	55,786	55,079	53,354	51,101	49,728	49,824	49,626	50,147
R.&K.	6,144	6,130	5,754	5,367	5,447	5,545	5,572	5,534
S.I.	39,455	39,586	38,113	36,897	35,877	36,492	36,814	36,629

(2) Cost of staff, 1929-37

(In crores of rupees)

Railways :								
Burma	1·47	1·38	1·30	1·23	1·22	1·24	1·21	1·17
E.B.	2·50	2·46	2·37	2·21	2·17	2·22	2·35	2·36
E.I.	6·49	6·36	5·56	5·25	5·73	5·90	6·07	6·09
G.I.P.	5·61	5·34	4·73	4·45	4·37	4·38	4·39	4·42
N.W.	6·38	6·31	5·87	5·50	5·58	5·60	5·73	5·70
A.B.	0·65	0·64	0·61	0·63	0·64	0·65	0·67	0·67
B.N.	3·08	3·03	2·99	2·84	2·80	2·83	2·98	3·17
B.&N.W.	0·67	0·67	0·68	0·67	0·69	0·71	0·72	0·73
B.B.&C.I.	4·28	4·38	4·00	3·72	3·78	3·78	3·90	3·86
M.&S.M.	2·27	2·41	2·30	2·16	2·27	2·28	2·36	2·34
R.&K.	0·15	0·15	0·16	0·15	0·15	0·15	0·16	0·15
S.I.	1·75	1·80	1·70	1·66	1·65	1·66	1·66	1·64

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INDEX